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Editorial Notes

WITH this issue the second year of ANTIQUITY is completed. The support given by our readers shows a steady increase and we hope that this will be continued. The subscription for 1929 is actually not due until next March, but as a matter of convenience a renewal form is enclosed with this number for the use of subscribers (other than those who pay by orders on their banks or who have paid in advance).

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Hitherto ANTIQUITY has been published punctually on the 15th day of the month of issue, and though this has been printed clearly in our notices some misconception seems to have arisen. We propose to alter the day of publication, and future numbers will appear on 1 March, 1 June, 1 September and 1 December each year.

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The title-page, contents, and index to Volume II are included with this number. Particulars of binding cases and terms for binding the volume are given in the notices on the second page of the cover.

It has been our custom in these notes to comment on important current events in the archaeological world, but during the last few weeks we have been in Iraq and cut off from correspondence and other communication. Under these circumstances the usual editorial notes do not appear, but they will be resumed in the next number. We wish it were possible to write of the wonderful experience of flying over dead cities in this ancient land. What we have seen even in a single flight would, if adequately described, fill more than the whole of this number of ANTIQUITY. In one instance we flew over a dozen towns buried in dust beside the Tigris—their names forgotten and their very existence perhaps unsuspected. The vast city of Caliph Harun al-Raschid (died 809 A.D.), twenty miles long and three or four broad, lies visible in absolute completeness, with its gardens, houses, roads and canals, as plainly as if still teeming with life. Such wonderful flights leave one almost breathless!

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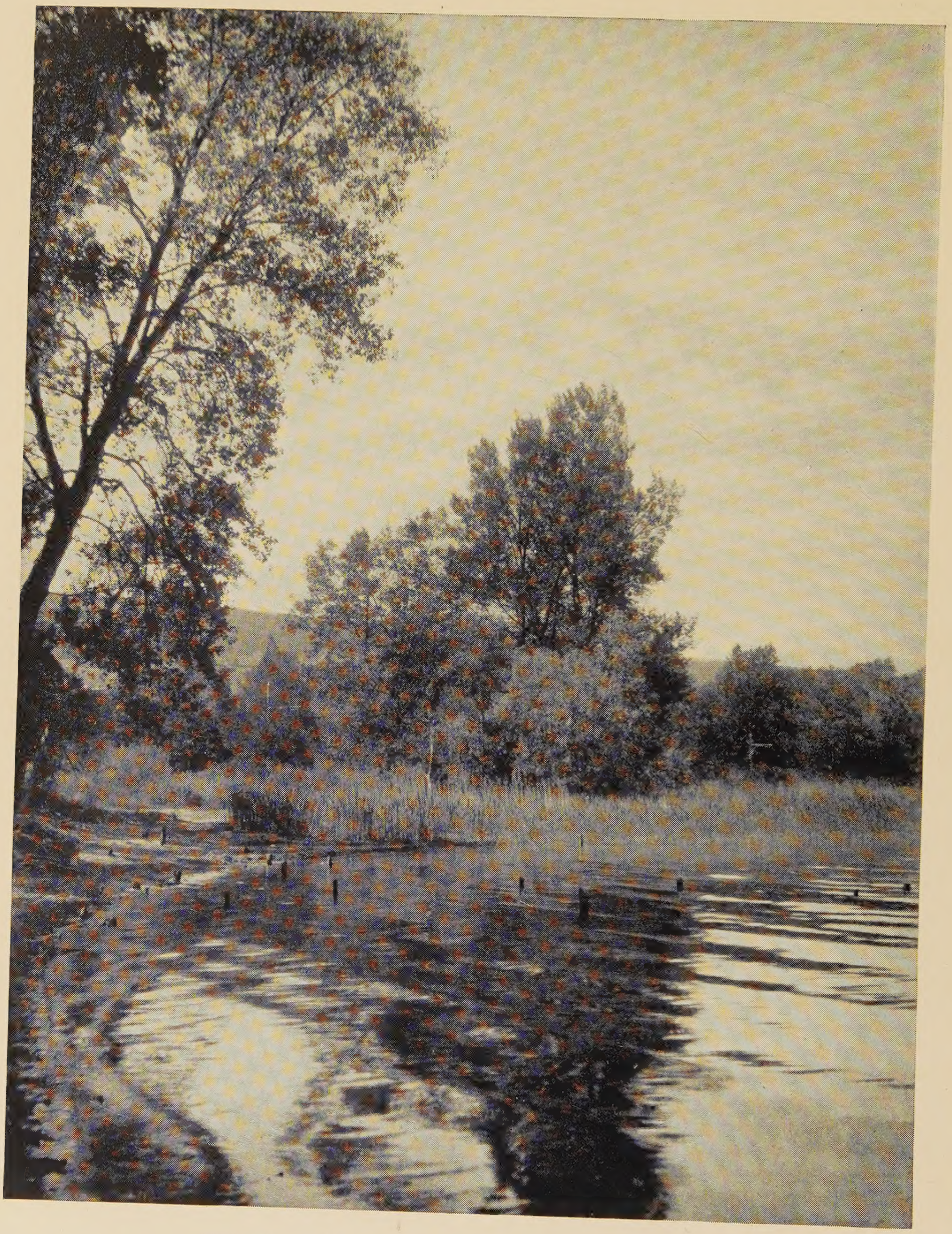
PLATE I



NEOLITHIC PILES AT AUVERNIER, LAKE OF NEUCHATEL

Ph. C. O. Waterhouse

facing p. 387

The Oldest Swiss Lake-dwellings*

by PAUL VOUGA

WHEN the first lake-dwellings were discovered in 1856, people at once began to explore every site above or below water where the presence of stakes indicated a pile-settlement. These investigations, however, were carried out with no regard for system or stratification ; had it been otherwise the problem under discussion would have been solved then. Unfortunately the collection of masses of objects was the main consideration ; digging was conducted quite haphazard, and was concentrated on those spots where finds were expected. Thus has it come about that the surface of our Swiss lake-dwellings is so riddled with pits that too often it no longer exists at all save as a memory. But when surface-digging proved barren it often happened that excavations were simply discontinued, with the result that the upper layers or those below remained intact. It was this fact which moved the Neuchatel Committee for Archaeological Research to undertake a series of systematic excavations, by means of which a limited number of sites would be uncovered layer by layer, with the least possible disturbance. After several fruitless attempts we have at last found, amongst the most important of our Stone Age sites, some which are virgin and have never been dug into ; and these have enabled us to determine the succession of the different neolithic cultures.

Without going into details which would be out of place here, we may say that our neolithic civilization, up to and including the Copper Age, is represented by two phases ; these are quite clearly distinguishable and are confirmed by all our researches. The oldest of these phases is represented only by a single layer, whilst the second consists of two or three superimposed. One might therefore describe them as Neolithic I and Neolithic II, subdividing the latter into three: IIa, IIb, IIc. I prefer, however, to rely on pure stratigraphy and propose the following terms ; Lower (or early) Neolithic ; Middle Neolithic ; Upper (or late) Neolithic ; and lastly, Eneolithic (or Copper) Age.

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* Translated by the Editor.

That is the order in which I am going to describe each of the layers brought to light—layers which, it should be added, are always separated from each other by a barren layer of a certain thickness. Before, however, passing to consider the objects peculiar to each layer (and which are therefore typical of the period represented) it is essential to note that a large number of implements are common to *all* layers, and cannot therefore be taken into account in the determination of a period. This is true of most of the bone objects (piercers, so-called chisels, daggers, awls), of the querns, sharpeners, net-sinkers, even of the axes, whose form is entirely dependent upon the kind of pebble used. The explanation is that, when the neolithic culture first appeared in our country, their ultimate form was already fully developed.

To determine the characteristics of a layer one must take into account not only differences in the forms of objects intended for the same purpose, but also variations resulting from the nature of the raw material used. It is proper also to record the objects peculiar to any given layer. Since, however, these may only be absent elsewhere because they do not happen yet to have been met with in excavation, their importance for purposes of classification is clearly slight : one cannot always, however, pass over such objects. Lastly I may add that it is always rash to define a culture by means of a single object, for the type to which it belongs may quite well be a survival. The attribution of a site or an archaeological deposit to such and such a period only becomes certain when the bulk of the objects found have the characteristics of a known layer. With these preliminaries, let us examine the characteristics of each of the four layers at Auvernier, Cortaillod, Bevaix and Saint-Aubin, or, for the matter of that, at any of the sites susceptible of excavation within the Neuchatel region.

1. Lower (or Early) Neolithic

The archaeological deposit containing traces of this first occupation of our shores always rests upon the lacustrine clay or ' blanc-fond ', which forms the natural soil. It occurs today at a depth of a metre below the mean level of the lake, or, on the shores, at a depth varying between one and two metres—the depth depending upon whether the site was occupied throughout the neolithic period or for a part of it only. Its thickness is equally variable, according to whether one is exploring the centre or margin of the site ; it has however, up to now, never been found so strongly developed as the Middle Neolithic layer—proving, it seems, a shorter length of time for occupation.

Contrary to all expectations, the objects found in this ancient layer are, for the most part, of a much more advanced technique than those found in the upper layers. This is particularly true of the pottery. The establishment of this irrefutable conclusion has dealt a very serious blow to the purely typological system of classification, based on progressive improvement.

To bring out the essential differences between the layers, that is, between the cultures, I will describe first the results obtained by comparing the objects common to all phases—such as axe-holders, flints, pottery—and then give an account of the peculiar features which are to be attributed to the disuse of certain objects, or to the invention or adoption of a new implement or a new ornament.

A. Axe-holders (*gaines de hache*). The axe-holders of the Lower Neolithic belong to three different types, not one of which persists entirely into the subsequent cultures. By far the commonest type—the only one which may have continued in occasional use later—consists of a holder with a rudimentary spur, recalling the butted holders (*gaines à talon*) of the later periods, but with this capital distinction—that the butt is never separated from the top of the holder by even the smallest stop-ridge ; so that there is really no butt at all properly so called, but only a gradual thinning of the end to be inserted in the handle (figure 7 : E).

But the principle of the stop-ridge was not quite unknown to the older neolithic people ; for it appeared in the second type of holder—a very rare one it is true—of the kind called ‘ with perforated butt ’ (*à talon perforé*).

Lastly, the third type, used also for hafting chisels, consists of a rather long horn, as straight as possible, whose blunt end was inserted in a hole made in a wooden club-shaped handle. It is for this reason called the ‘ intrusive holder ’ (*gaine perforante*). [Figure 7 : M].

It sometimes happens that, in order to grip the holder more tightly in the haft, the former was grooved to enable a pin or bolt (*goupille*) to be inserted ; that is so, for example, with the intrusive holder figured by de Morgan in *L'Anthropologie*, 1920, p. 499.

B. Flint. Apart from a few rare points and occasional scrapers, most of the flints are to be described as ‘ Magdalenian ’ blades, with one-sided retouching in the great majority of instances. But the feature which on our sites is specially characteristic of the Lower Neolithic flints is the material itself ; this is of a dark brown colour, semi-transparent at the edges, and it does not seem to have come from local deposits, where the flint is invariably opaque and generally either white, dusky or black. (Figure 7 : H, J, K).*

C. Pottery. What strikes everyone who has the opportunity of examining the material from the lower level is undoubtedly the excellence of the pottery. The shapes, texture and firing are all remarkable and reveal a profound knowledge of an art which is certainly not in its infancy.

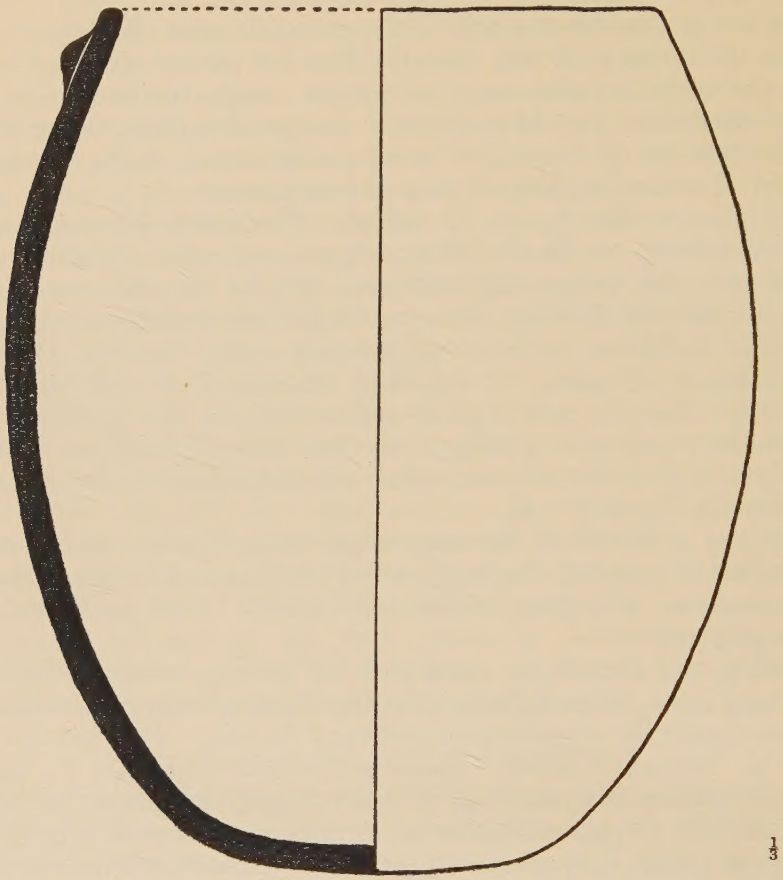

FIG. 1. POT [529] FROM PORT CONTY, NEUCHATEL ; LOWER NEOLITHIC LAYER

Although complete vases are extremely rare, it is possible from fragments to acquire an exact knowledge of the forms in use. Two prevailing types may be distinguished:—The bowl, generally round-bottomed, rather small in size (fig. 1), and small pots with a flat-bottom (fig. 6); and the globular pot, with slightly constricted neck and more or less projecting rim (fig. 2). Most of the globular pots have, for handles, knobs which are often perforated and which are set round the shoulder. The smallest of these vessels usually have, in place of perforated knobs, a series of lugs placed round the upper part of the neck, right on the rim, which when set closely together form a regular ornamented motif (fig. 7: A).

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* H and J are of black and K of yellowish flint.—ED.

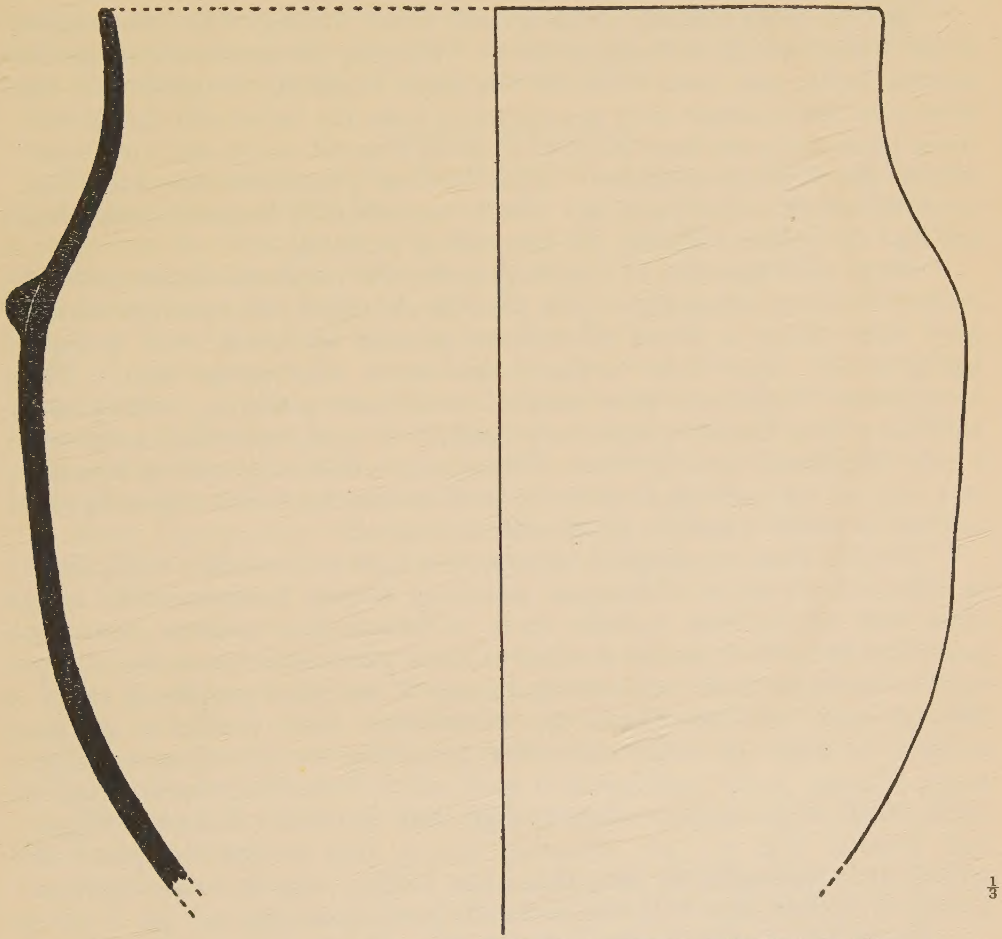

FIG. 2. POT [628] FROM PORT CONTY, NEUCHATEL; LOWER NEOLITHIC LAYER

The texture is very often remarkably fine ; only the largest vessels have a thick base, in which may be seen quartz fragments mixed in the clay. The commonest colour is black, often burnished, fallaciously suggesting Bronze Age vessels. One finds, however, every shade of colour ranging between black and brick red, according to variations in the firing.

But the most striking characteristic of the pottery of the lower layer is the firing, which is really perfect. Whereas the potsherds from the middle layer, and even those of the Late Neolithic, crumble for the most part the moment they are removed from the habitually damp soil, those from the lower layer are free from all trace of decay, and ring when struck like modern crockery. This is clear proof that the paste has been thoroughly fired, and not merely superficially heated, as we shall see was the practice during the succeeding periods.

With the exception of five fragments, the potsherds recovered are entirely without ornament. It is possible, however, that certain vessels may have borne a linear decoration painted in black on a greyish background ; but only further discoveries can settle this. The ornamented fragments have parallel rectilinear incisions, which may well have been merely proprietary marks. I would mention, however, a tiny fragment, coming from Cortaillod, whose decoration consists of a strip of bitumen applied to the neck and incised with a double row of 'wolf's teeth' partially filled with red ochre.

Besides these typological criteria, the Lower Neolithic civilization is marked by a series of features which up to now have occurred in it alone and which seem peculiar to it. Observe, for instance, that the prevalent form of ornament consists of small perforated bones (fig. 7 : c), such as are commonly used amongst some of the black peoples of today. Besides these necklace-beads, the excavations have yielded a certain number of beads of wood and ivory, generally round. Use was also made of boars' tusks, perforated at each end and recalling the bowmen's wristguards of the Copper Age, though these latter are of course bigger and broader (fig. 7 : L). Possibly during this period the place of wristguards was taken by long thin bone blades, bent in some way that I cannot explain, also with the two ends perforated (fig. 7 : D).

Up to the present the investigations have only yielded three triangular flint points which might have served as arrowheads ; but it seems probable that the flint-tipped shaft was more usually fitted with a sharp flake. As arrowheads there was also used a double-pointed bone, which is thoroughly characteristic of the layer, and which never appears in the upper deposits (fig. 7 : G). Although it is always dangerous to draw any conclusions whatever from negative evidence, I must call attention to the fact that, in the numerous excavations made up to now in the Lower Neolithic deposits, there has never been found the smallest trace of spindle-whorls, whether of baked clay or of stone. And yet they abound in the upper layers ! It seems, therefore, justifiable to conclude that the spindle-whorl was unknown in the Lower Neolithic, although spinning and weaving was certainly practised, as we know from the numerous remains of woven materials.

2. Middle Neolithic

It is to this stage of the Neolithic period that the Swiss archaeologists, beginning with Désor, gave the name ‘ bel age de la pierre ’, a phrase to be abandoned now that we are familiar with that Lower Neolithic which the first excavators hardly ever had occasion to reach. This lower layer has been ignored for so long that one may claim on behalf of the Neuchatel Committee for Prehistoric Archaeology the credit of having brought it to light for the first time by their recent investigations. It has remained unnoticed because it is always separated from the middle layer by a thick deposit of sand or barren clay. Now, on reaching the top of this clay, the older excavators imagined they had touched virgin soil ; consequently they stopped work.

Since I propose to refer later to the origin of these barren deposits, I shall pass on at once to the archaeological deposit forming the middle layer. This deposit, much the most important of those met with, sometimes attains a thickness of more than a metre ; its essential constituent is vegetable débris with which is mixed, as well as pottery, a large quantity of bones, chips of stone (the by-products of axe-making) and the remains of habitations generally destroyed by fire. It is what the older excavators picturesquely called the ‘ lake-dwellers’ midden ’ (*fumier lacustre*).

The characteristics of this layer may be summarized under the following headings :—

A. Axe-holders. When we reach the middle layer, we have occasion to distinguish those holders which were intended to hold *axes*—that is to say stones whose cutting edge is parallel to the handle—from those which were to hold *adzes*, whose cutting edge is at right angles to the handle and which were mainly used for barking or planing.

The characteristic axe-holder is of the butted type with a long spur (fig. 8 : K) ; it is generally large and introduces a new method of hafting, or rather a much securer attachment of the holder in the handle, which latter has a bulging shape, tapering more than in the preceding type. The spur which rests against this longer handle contributes greatly towards stability, and helps to make the implement a homogeneous whole. This is further achieved by the thongs which, reinforced by bitumen, generally complete the attachment.

Besides these long-spurred holders, we find appearing—probably as tools of less force—the butted type characterized by the absence of a spur (fig. 8 : H). But, whatever the type used, the holders of the middle layer always have a stop-ridge, to prevent them from being forced into the handle.

The adze-holder consists of a horn cylinder, hollowed at the two ends so as to hold the stone at one end, while in the other was inserted the crooked end of the handle, this being bent either by art or nature (fig. 8 : G). Clearly this method of hafting offers much less resistance than the preceding one ; and it is easy to see that the shaped stones would be much smaller when they served as adzes ; it was for such purposes that they used the nephrites and jadeites which are the joy of collectors. It is to be observed however, in this connexion, that in spite of many statements to the contrary, the axes of this fine material are not more common in the ' bel age de la pierre ' than before or after it ; indeed, recent and precisely dated excavations show, on the contrary, that they may become more and more rare the further we get away from (*i.e.* above) the lowest layer, which itself contains the largest number. They have however a tendency to become more numerous again in the Copper Age.

B. FLINT. The flint-work is appreciably richer and more varied in the Middle Neolithic than in the Early Neolithic. It provides a series of objects, some of which are typical of the layer and are figured here with a short description. But the most remarkable feature is the material used. Whereas in the lowest layer, as we said, the flints are small and of a semi-transparent brown, those of the middle layer on the contrary tend to be large and are invariably opaque. They are, with rare exceptions including objects ' de luxe ', of local flint, whose colours —white, grey, dusky or blackish—are known and recognized by geologists.

The implement of most frequent occurrence is a wide stumpy scraper, usually convex. The ' type-fossil ' of flint is the arrowhead, which in this layer adopts two equally abundant forms—the triangle and the lozenge (fig. 8 : B, E). One finds rudimentary points associated with really perfect types, and triangular points with a straight base as well as points with a slightly hollowed base ; so that not the least importance can be attached to fineness of technique. The recent excavations have yielded two of these points, still adhering to a piece of the wooden shaft (fig. 3 : A). This latter was itself carefully pointed, and very accurately cleft in the middle to form a kind of beak inside which the flint was put, it being thus wedged along at least two-thirds of its length. Finally the barb was attached to the shaft by means of a lump of bitumen symmetrically placed in the form of a triangle or a lozenge (fig. 3 : B).

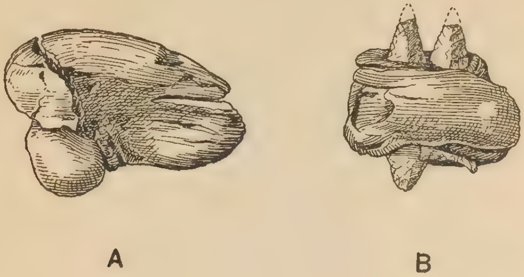

Fig. 3

A is a small pebble set in wood (Cortaillod) ;

B two flint arrowheads held in a coil of bitumen. The points of both are broken and it was doubtless to assist the work of resharpening them that they were thus placed. (St. Aubin).

C. Pottery. The lake-dwellers of the middle level may have achieved some advance in the manufacture of their axes and arrows ; but it is certainly otherwise with their pottery. Shape, texture, firing, everything leaves much to be desired. One gets the impression of an art in its infancy. To the variety of types of the preceding period succeeds a deplorable uniformity. The cylinder seems to have been their sole model in the construction of vessels ; one can hardly speak of a belly, so flat are the few fragments of any importance which have come to light (figs. 4 and 5).

As for the paste,* it is almost always so thick that the fire could not penetrate right through, so that much of it has remained unfired. If we examine the section of a potsherd (see plate II), we find that its centre is unfired, and that only the outer portions are hardened by firing. Since, in addition, the surface of the inside is appreciably harder than that of the outside, it seems to follow that the vessel was mainly fired by means of a fire lit inside it.†

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* Pâte : I have usually translated this ' texture '. It means the material of the pot, called by potters the ' biscuit '.—Ed.

Perforated knobs and knobs round the belly are quite unknown in this layer. The only means of holding or suspension was the massive unornamented band surrounding the upper part of the vase (fig. 4), or knobs placed in a row quite near the edge, and made, in most instances, by pinching up the soft clay (fig. 5); whereas those of the preceding period are clearly lumps applied to the already formed vessel.

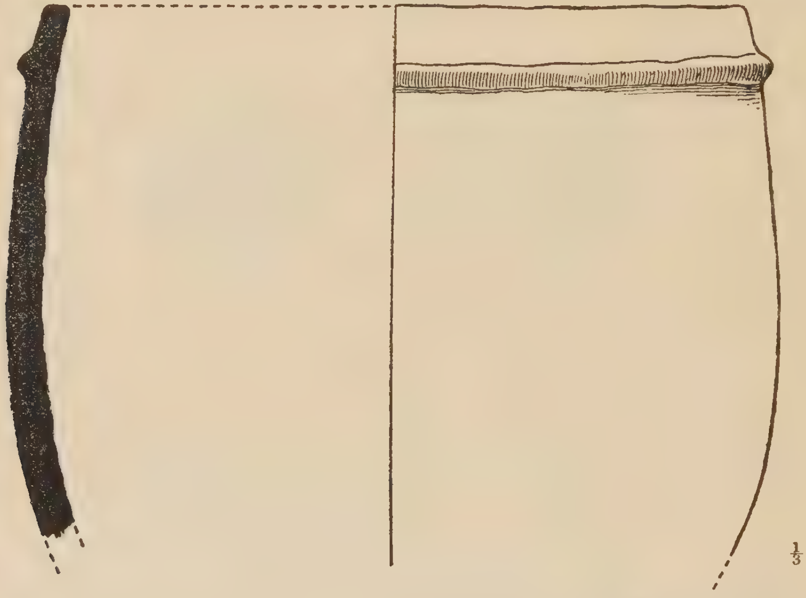

FIG. 4. UPPER PART OF POT [1927] FROM AUVERNIER; MIDDLE NEOLITHIC LAYER

There is a form of ornament consisting of flat round pellets (3 to 5 millimetres in diameter) applied to the soft clay (fig. 8: J); there is no other decorative motif in this layer.

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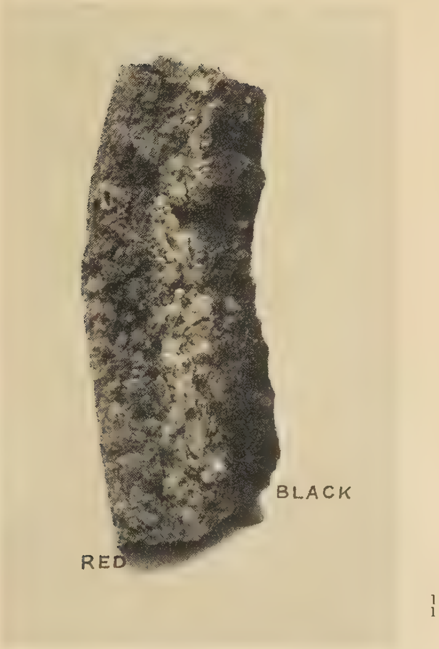
† It is suggested that the same result might be obtained by piling the vessels mouth downwards for firing as is done in the Canary Islands for instance. This would account for the fact that the interior is black and the exterior red.—ED.

PLATE II



SECTION OF POTSHERD FROM MIDDLE NEOLITHIC LAYER AT AUVERNIER, SHOWING LIGHT HALF-BAKED BAND IN CENTRE

Ph. C. O. Waterhouse

facing p. 396

As I have already said, the middle layer entirely lacks the perforated or notched bone beads, the perforated boars' tusks, and the double-pointed bone implements which were used as arrowheads. On the other hand it contains the first spindle-whorls, mostly of stone but occasionally of burnt clay (fig. 8 : L). Like the pottery, they are unornamented.

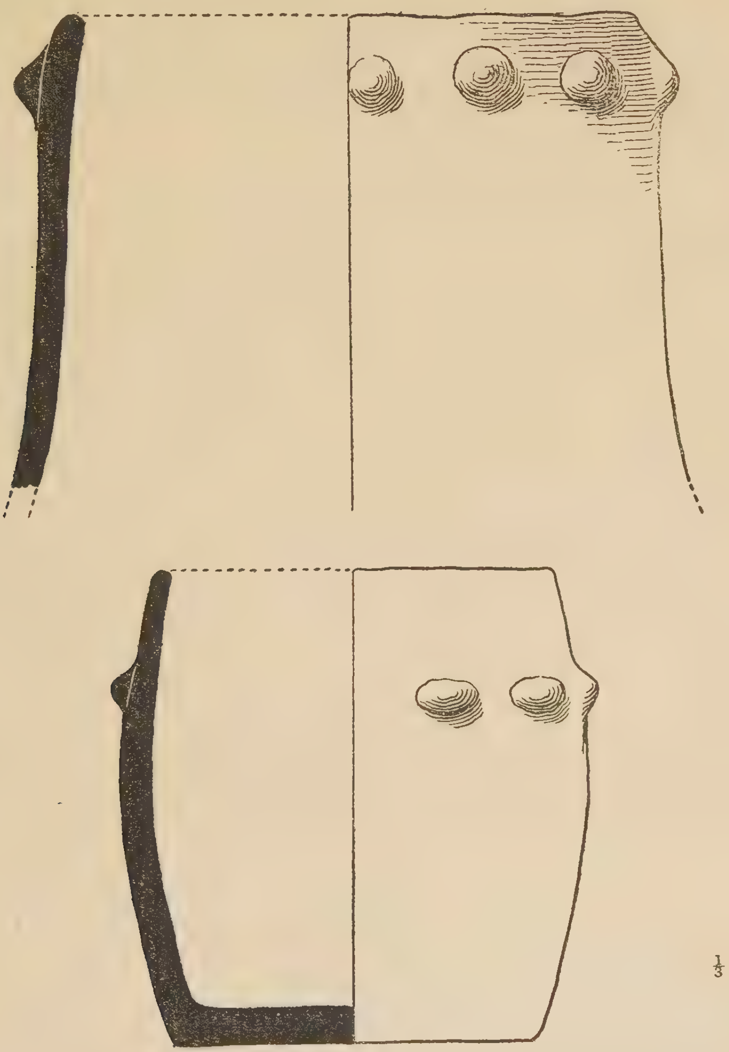


Fig. 5. POTS FROM AUVERNIER [LOWER, NO. 1964] ; MIDDLE NEOLITHIC LAYER

The bone arrowheads of the middle layer are clearly distinguishable from those of the preceding period in that they are generally much shorter and blunter, and above all by the fact that they are always crooked at one end, so as to produce a rudimentary barb (fig. 8 : F). Let me finally point out, as belonging to the middle layer, the art of boring large hard stones, which is responsible for the creation of triangular axe-hammers about 15 centimetres (6 inches) long and 3 to 4 centimetres thick (fig. 10 : B).

3. UPPER (OR LATE) NEOLITHIC

Before setting down the essential peculiarities of this layer, it is necessary to state that it forms, so far as the evidence goes, the normal evolution of the preceding layer, of which it is only an advanced phase. It lies above it and is separated from it by a barren deposit at present unexplained, but which might well correspond with a raising of the level of the lake of purely natural origin. One fact at any rate emerges from a study of the layer made on the spot—the sites where this layer is found actually superimposed upon the preceding layer are very rare. (The only sites within my knowledge where this superposition occurs are the stations of Saint-Blaise (?), Auvernier and Bevaix). As a rule this late layer forms the base of the archaeological deposit of the Copper Age, which is usually found inland. This would prove that the water level of the lake stood at a higher level during the Late Neolithic than during the Middle Neolithic period.

So far as its formation is concerned, the archaeological deposit at Auvernier is of the same character as that of the preceding layer, with the reservation that it is not so thick and is less stratified.

As typical of the Late Neolithic which, I repeat, may contain all the preceding types as merely so many survivals, it is necessary to note the following :—

A. AXE-HOLDERS. Besides the spurred type, which persists (fig. 9 : C), but is becoming gradually rarer, the butted spurless type prevails. Adzes on the other hand, are no longer hafted in socketed cylindrical holders ; doubtless the weakness of this method of hafting was recognized, for there was substituted for it another which consisted of shaping the base of the expanded end of the handle into a trapezoidal butt (tenon) ; against this butt (tenon) was then placed the elongated butt of a holder, recalling the butted holder ; then the base of this elongated butt was hollowed out, and at a later stage of development split, to fit into the butt (tenon) ; and one had as a result the typical adze-holder which obtained from the Late Neolithic onwards—that with a split or cloven butt (fig. 9: B, D).

B. FLINT. All that we can definitely state today about the flints of the Upper Neolithic is that, in a general way, they are more finely retouched than in the preceding phase, and that in addition the shapes are improved; all the same there are no essential differences to be observed. We may note however the first appearance of the barbed arrowhead, evolved, as a long series of intermediate forms show, from the lozenge-shaped point whose side-angles developed gradually until they finally stood out well from the rounded tang (fig. 9: F).

C. POTTERY. The most noticeable advance in this layer is in the pottery, which, although still very thick and rather badly fired, is yet much harder than that of the Middle Neolithic, and begins to have decoration applied by pressure on the clay while soft. Unfortunately the fragments so far recovered do not permit us to speak of any sort of style. Handles remain unknown ; suspension or grasp is still provided for either by a raised band or by a series of knobs, which may occur below the rim of the vessels; for the cylinder of the preceding phase is curved towards the top and somewhat swollen towards the bottom, so as to produce a globular shape. In a number of vessels, particularly big ones, the band or row of knobs is replaced by rather pronounced lugs with serrated ornament irregularly applied to the neck (fig. 11 : B).

Since the firing is appreciably better than during the middle phase, the prevailing colour of the pottery has changed from dark brown to black, or blackish, but without acquiring the regular dark shade of the lower layer, or its fine lustrous surface.

Besides the adze-holders with long butts (hollowed or cloven) which form the clearest distinguishing feature of this layer, one may observe the process of transition from the triangular axe-hammer, perhaps used as a tomahawk, to the lozenge-shaped axe-hammer, one end of which, being blunt, was used as a hammer (fig. 11 : C).

4. ENEOLITHIC OR COPPER AGE

Whatever may be the opinion of M. Franchet, particularly as the result of his researches in Brittany, there can be no doubt, for one who has investigated stratified lake-dwellings, that pottery occurs much earlier than the knowledge of metal ; for metal remains entirely unknown during the first three phases of a period which one may therefore rightly call Neolithic.

The archaeological deposit in which the first copper objects appear—beads, awls, axes, resembling those of ground stone (perhaps also triangular daggers recalling the flint points, but I have found none of these)—occurs today almost at the level of the surface. Generally the deposit is reached after the removal of a layer of sand or pebbles about 4 to 6 inches (10 to 15 centimetres) thick. Since however it has nearly everywhere been worked to the bottom, it is very difficult to assign it a thickness which might eventually serve as a basis for comparison. Where it occurs clearly undisturbed, I was able to observe, however, that only at the bottom was it clearly stratified ; now, as the covering deposit had not been touched, it followed that, if its upper part was not stratified, it was because it had been disturbed before the deposition of the covering layer—that is, at a very remote period. This seems to be explained by the supposition that the site of the abandoned Eneolithic settlement was cultivated by the Bronze Age lake dwellers, who had their settlements much further out in the lake in consequence of a pronounced lowering of the water-level caused by the persistent drought which characterized this epoch.

Typologically, there would be no ground for separating the Neolithic from the Eneolithic, for one evolves normally from the other. Two new elements, however—copper and a particular kind of flint—make their appearance. Since, however, these elements might happen to be present in a find which had to be dated, let us record the new features acquired, adopting the same criteria as before.

A. AXE-HOLDERS. The typical holder for axes meant for heavy work is still that with a straight butt and no spur (fig. 12 : E); for adzes, the only form which survived seems to have been the cloven-butted holder, even more deeply cleft than during the preceding phase (fig. 12 : D).

B. FLINT. Apart from imported flints, which will be dealt with later, the only remarks to be made concern arrowheads, amongst which the kind (fig. 13 : G) with strongly pronounced barbs prevails. (This type however survives throughout the whole Bronze Age and even later). Perhaps it may be found that the notched saw originated during this phase ; but the numbers recovered up to now are not sufficiently numerous to establish this.

C. POTTERY. From the few sherds which can with certainty be assigned to this layer, we learn nothing about the precise forms of the vessel used. Two main groups, however, may apparently be distinguished :—those of the first group are rather small dishes or bowls, with thinnish sides, well fired and blackened in the process ; those of the second are large and served mainly for storing food—the sides are thicker and they are fired to a dark red colour. Fragments of the latter are generally ornamented with parallel incised marks placed along the rim or on the shoulder ; sometimes there is an undulating band round the top of the vessel (fig. 13 : A) ; sometimes there may be only protuberances serving as lugs. The small vessels, on the contrary, seem to lack this festoon-like ornament alluded to, and to have only parallel incised marks (fig. 12 : G), which, when arranged obliquely and placed close together, approximate to what is called cord-ornament (*schnur-keramik*). Although handles were certainly known at this period in eastern Switzerland, up to the present they have never been met with on a Copper Age site in western Switzerland.

Lastly, it is to be noted that a further marked evolution of form takes place in the graceful serpentine axe-hammers of this period (phase). The truncated lozenge-form of the preceding period is practically replaced by magnificent implements with a pronounced median swelling forming, in the case both of axes and hammers, a graceful curve (fig. 13 : C, D). The cutting edge is often expanded so as to form a crescent. Often too the back of the weapon is furnished with deeply cut and regular grooves (fig. 13 : D).

But, as I said, the best criterion or test of the Eneolithic is the presence, in this inherited neolithic milieu, of obviously imported copper or flint objects.

A most interesting study (says Forrer) could have been made of the many Copper Age objects found in Switzerland, if we had exact information about their stratigraphical position. Unfortunately this is lacking, and these later excavations of ours have yielded very few metal objects. For the moment I can only remind my readers that they all imitate an ornament, an implement or a weapon of stone or horn, and that their forms are modelled upon such. Nor is it possible here to discuss either the origin of the copper used, or the country where the knowledge of its use was first acquired. I would say only that native copper is extremely rare in our part of the world, and that consequently there can be no question of local discovery when we encounter the first metal objects, however rare they may be. They must then have been imported. And since the flint which remains to be considered was itself imported, let us before discussing the probable distribution centre briefly examine the flint.

In the Early Neolithic the flint used consisted mainly of blades of dark brown flint with semi-transparent edges ; in the Middle Neolithic the flint used was mainly a native opaque variety which is white, ‘ bistre ’ or blackish in colour. The majority of the flints belonging to the Eneolithic are made of a translucid honey-coloured substance so easily recognized that it long ago attracted attention, and has been the subject of much research which has been summarized in the writings of MM. de Saint-Venant and Hué. Now the outcome of these researches is that the geological formation yielding flint of this character is to be found at Pressigny in France, in the department of Indre-et-Loire. Should this identification be doubted by a sceptic, it would I am sure be sufficient to observe that these deposits, worked from Neolithic times onwards, are remarkable, not only on account of the character of the valuable raw material, but also for a product of workmanship which Déchelette describes as ‘ the fine working characterized by oblique, parallel, shallow ripple-flaking ’. And our Eneolithic stations have actually yielded several examples of these light-coloured flints, presenting just this characteristic workmanship (fig. 13 : F). No further doubts can remain.

Now, if we mark on a map of Switzerland the places where objects of Grand Pressigny flint have been found, we find that they are particularly abundant on the shores of the lake of Neuchatel and the neighbouring lakes of Bienne and Morat ; that they are found occasionally round the lake of Geneva ; and that in eastern Switzerland they are an extreme rarity. If we make a similar map of the find-spots of copper objects we get precisely the same result. Since objects of copper and those of Pressigny flint both make their appearance at the same moment (that is to say, in the same archaeological deposit) I feel justified, from this remarkable coincidence in time and place, in inferring that the two new features arrived simultaneously as part of the same trading operation. The agent can only have been the exporter of Pressigny, whose wares cannot possibly have reached us from the East. This conclusion is based on facts, and could easily be supported by evidence drawn from France ; it follows from it that metal (though the knowledge of it may very probably have originated in the eastern Mediterranean) reached Switzerland, not by the usual route of the Danube or the Rhone but by the western route—Mediterranean, Straits of Gibraltar, the coasts of the Iberian peninsula and France as far as the mouth of the Loire, up the Loire valley—where is encountered the Pressigny deposit,—thence probably along the Saône and Doubs valleys and by Vallorbe, Les Verrières or Les Brenets to the shores of the lake of Neuchatel ; whence it spread over the Swiss plateau.

Such is the conclusion one may draw, it seems to me, from the presence of Pressigny flint in the Eneolithic layer, together with the first, imported, objects of copper. Their multiplication, soon followed by a knowledge of the more resistant and more malleable alloy of copper and tin, was soon to usher in the period which our need of classification rather than the facts themselves makes us call the Bronze Age.

Since I have not got to deal here with the Bronze Age, I might conclude this already long paper ; but as for once I am privileged to address a non-specialist public on the subject of our lake-dwellings, I will take the opportunity of trying to put right this important matter of pile-structures. Ought one still, after the last excavations, to let pass as correct the conclusions of the earliest excavators, based as we recognize them to have been upon documentary as well as upon existing ethnographic evidence? Should one allow that structures were built for safety or health, over the water ? And should one explain the incontrovertible fact that the Bronze Age structures are built much further out on the lake than those of the Neolithic period, by the hypothesis of an advance in the art of construction ?

It would take much too long to set forth again in detail all the reasons why nowadays we regard this hypothesis as erroneous. I shall confine myself to enumerating the most important of them.

(1). The remains of the latest Bronze Age sites are met with today under more than six feet of water ; and the regulation of our water-supply 30 years ago lowered the level of the lake of Neuchatel by a mean amount of between four and five feet. Would it then have been possible for our ancestors to have driven in, right out on the lake and under nine feet of water, the piles which—to the number of ten thousand or so—a lake-dwelling of moderate importance requires ?—especially when one remembers that these piles have to penetrate at least a yard into the ground and project more than two yards, to withstand the waves and high floods.

(2). Supposing nevertheless that such was the case, is it conceivable that, under three feet of water only, assuming it to be no greater, the vegetable débris which forms the actual basis of the lake-dwellers' midden would be laid down and stratified ? Would it not rather be scattered by the smallest storm ?

(3). If however this deposit finally was formed, would it not, so long as it remained under the lake, be of an almost fluid consistency ? How then can one explain the fact, many times observed, that on the top of the débris layer are found huge stone querns whose weight alone should have made them sink right to the bottom ?

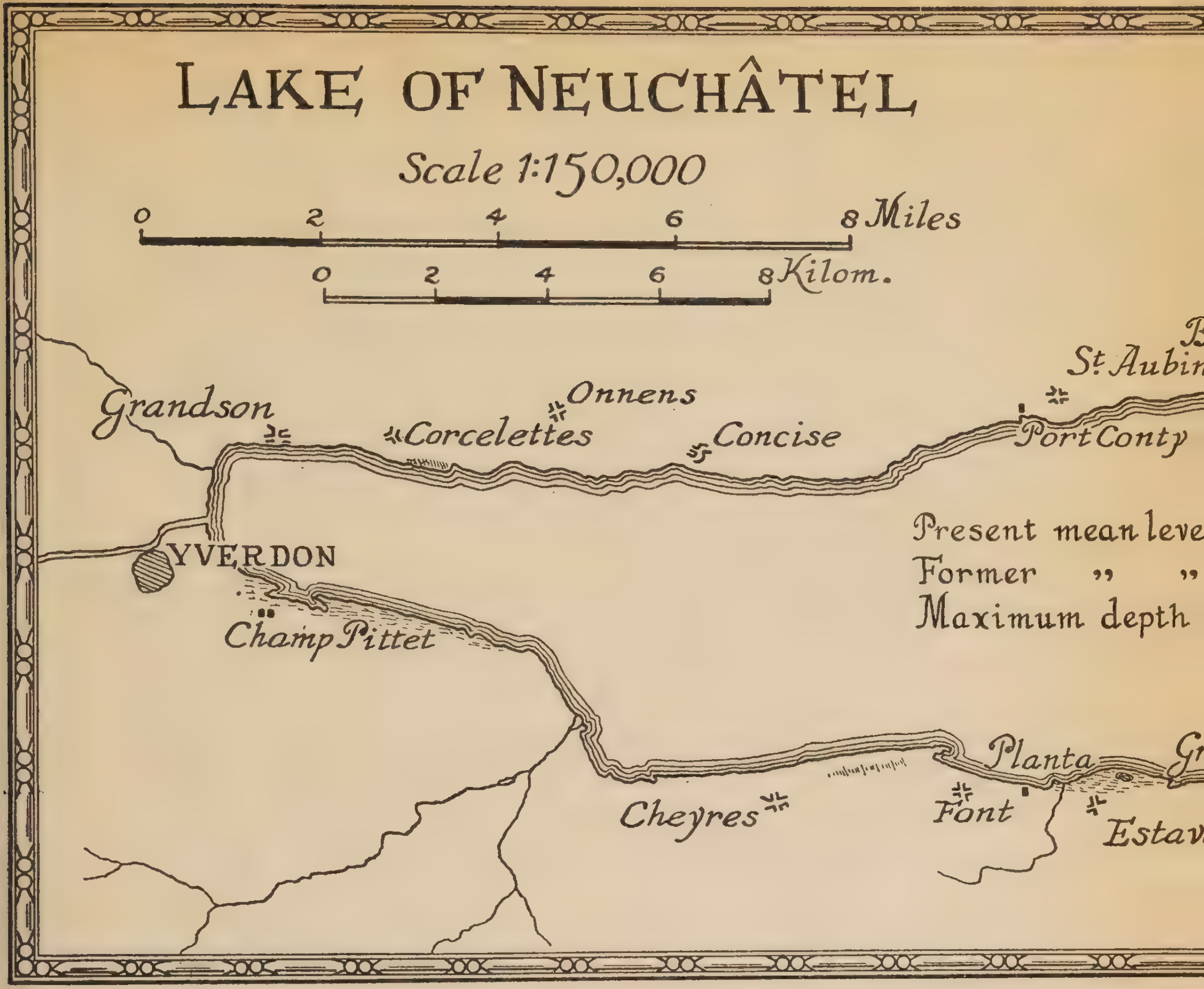
(4). Between each successive occupation-deposit on a given site, one can observe a barren layer, devoid of all traces of human activity ; one can hardly attribute to the mere passage of time the formation, *under water*, of this barren layer, in view of the fact that, during the two thousand years which have elapsed since the abandonment of the Bronze Age settlements, time has deposited nothing on the remains of the last lake-dwellers, whose potsherds and other relics are sometimes picked up on the surface.

(5). Further, the comparative study of the culture of the Middle and Late Neolithic and of the Eneolithic proves that there was no hiatus between any of these periods, whilst their respective sites in the same bay are rarely found superposed, but are found more or less far out in the lake.

Ought one not, then, to conclude, from the facts stated in the last two paragraphs, on the one hand (in view of the character of the lake-midden) that the pile structures of the Stone Age *were built on the shore and not over the water*, and that they were raised solely as a protection against floods ; and on the other (in view of the removal of each of the successive occupation-sites in the same bay) that the choice of sites was controlled by the level of the lake, which must have undergone important changes in the course of centuries ?

To support this last conclusion, let it be recalled that the recent researches of Scandinavian savants have proved that the Bronze Age can be equated with a long period of desiccation, whose effects, even if they have not yet been fixed geologically in our own country, would produce exactly the conditions described above (§1). In fact, if these habitation-sites are today covered by 6 feet of water, it does not mean that they were built by architectural geniuses ; it means simply that, as a result of the long drought the level of the lake had been lowered by several metres.

Translator's note. The Editor desires to record the fact that the photographs and drawings illustrating this article were all specially made by Mr C. O. Waterhouse, during a visit to Neuchatel undertaken for that purpose. He wishes to take this opportunity of expressing his thanks to Monsieur Vouga for his kindness on the occasion of his visit. As Monsieur Vouga was conducting excavations at Neuchatel, it was possible for us to see the actual layers described above in process of being uncovered.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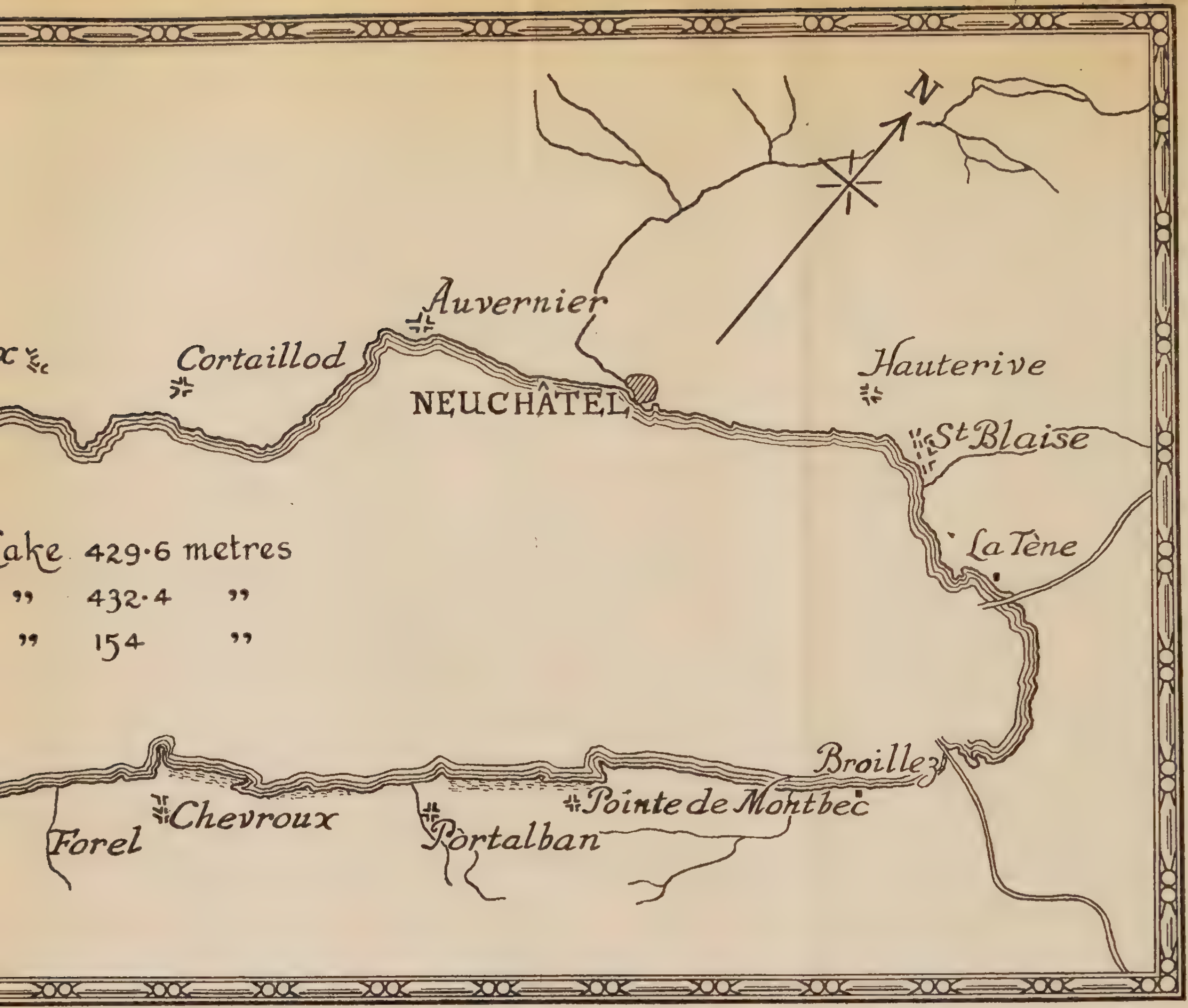

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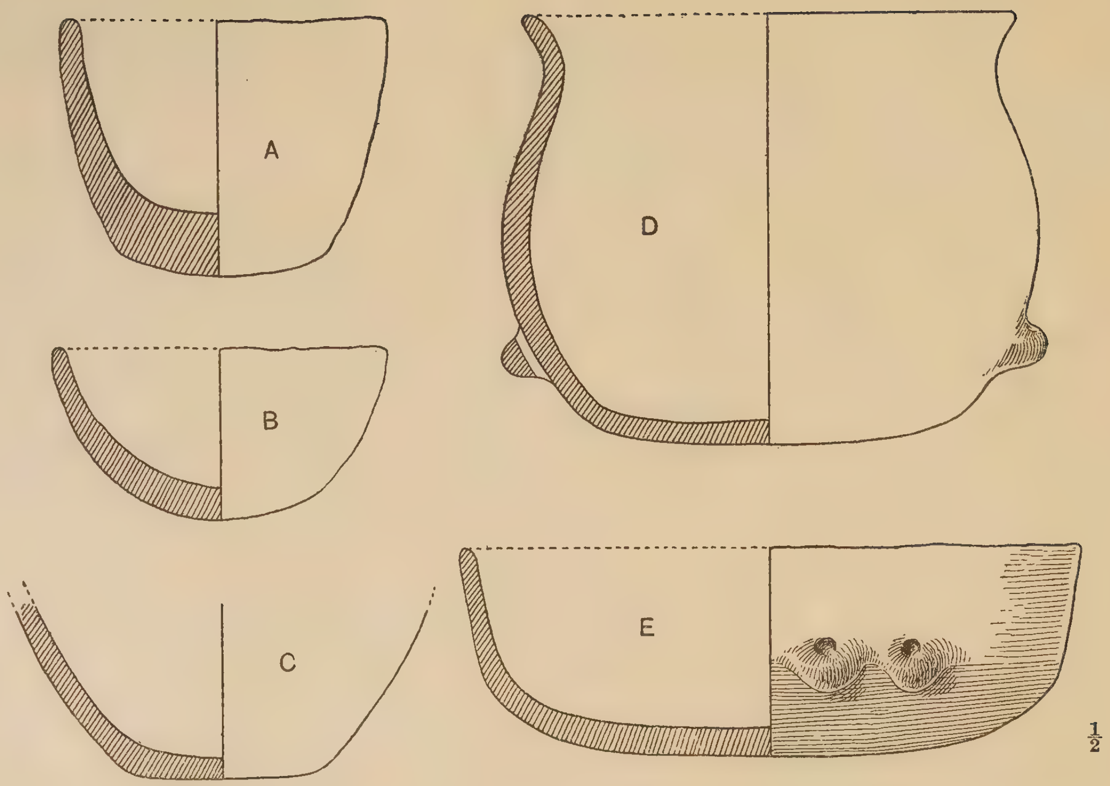


Fig. 6. TYPICAL POTS OF LOWER (OR EARLY) NEOLITHIC PERIOD, NEUCHATEL

A Port Conty [1208] B Port Conty [1094] C Port Conty [872]
D Port Conty [1229] E Cortaillod [921]

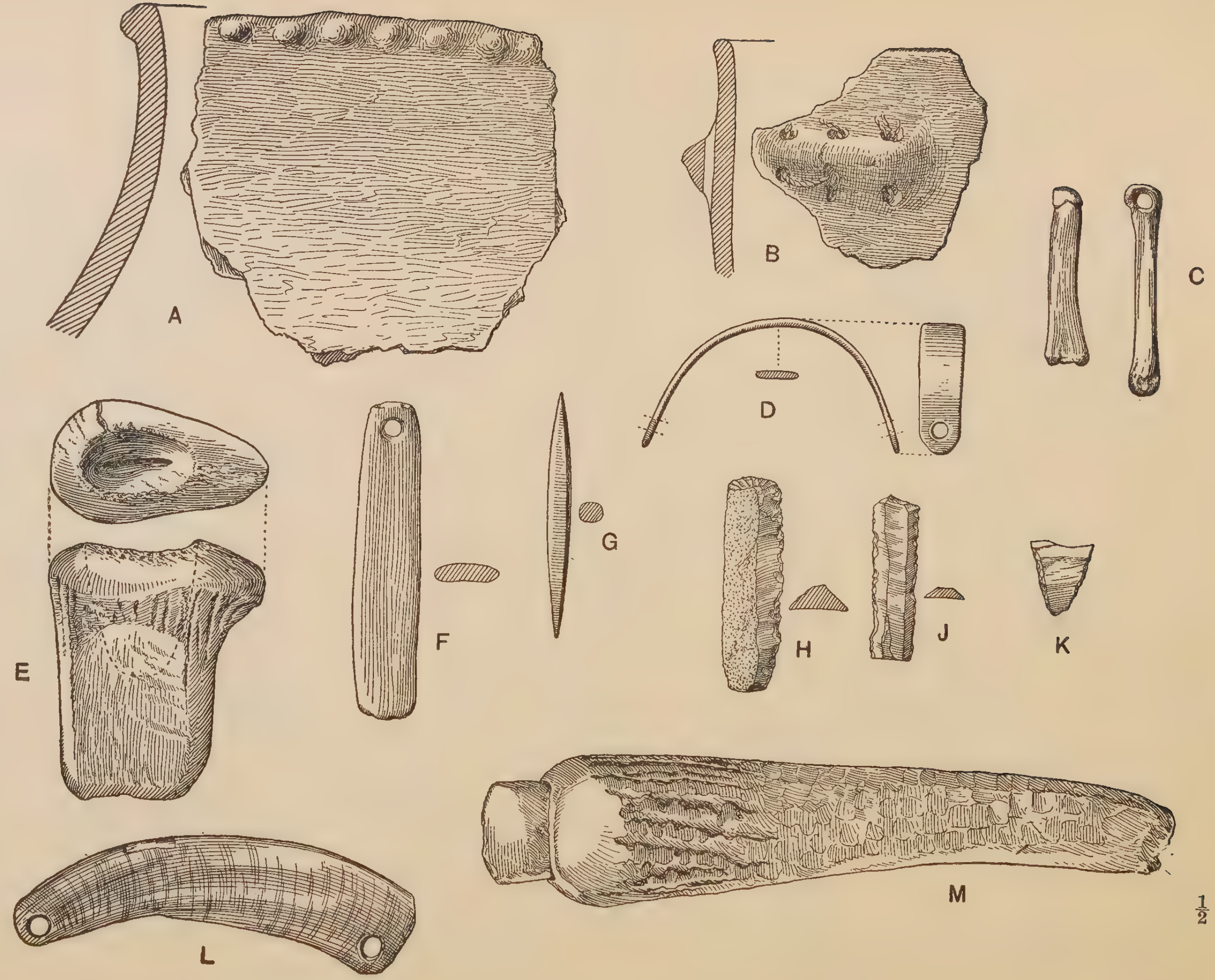


FIG. 7. TYPICAL OBJECTS OF LOWER (OR EARLY) NEOLITHIC PERIOD, NEUCHATEL

EXPLANATION OF FIG. 7

A	Rim of pot, Cortaillod [814]
B	„ Port Conty
C	Bone beads, Port Conty [970 and 619]
D	Curved bone plaque, Port Conty [1161]
E	Horn holder, Auvernier [2618]
F	Perforated bone object, Cortaillod [888]
G	Bone arrowhead, Port Conty [328]
H	Scraper of black flint, Port Conty [598]
J	Object of black flint, Port Conty [569]
K	‘ Petit tranchet ’ of yellowish flint, Port Conty [1003]
L	Perforated boar’s tusk, Port Conty [572]
M	Horn adze-holder, Port Conty [390]

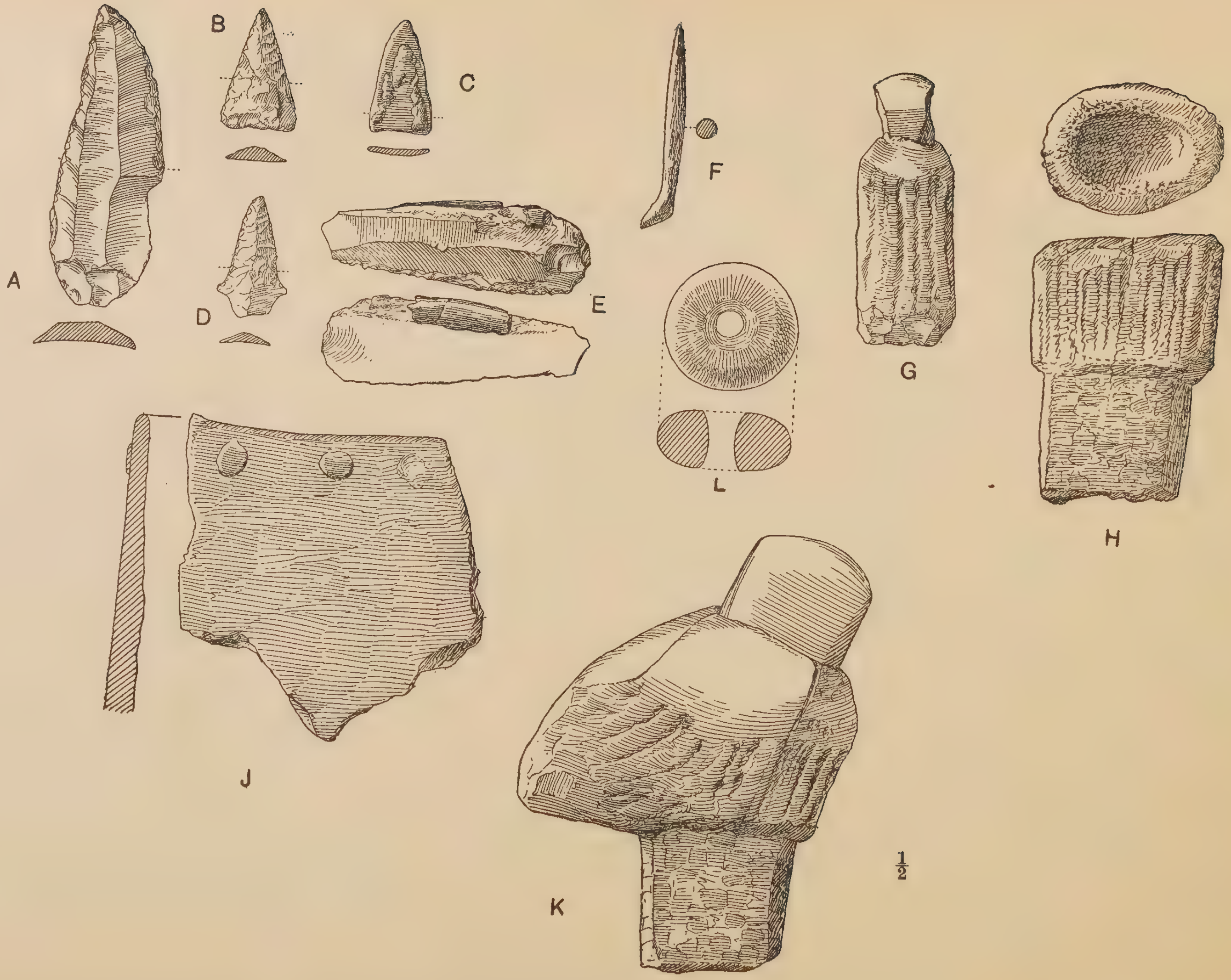


FIG. 8. TYPICAL OBJECTS OF MIDDLE NEOLITHIC PERIOD, NEUCHATEL

EXPLANATION OF FIG. 8

A	Object of white flint, Port Conty [212]
B	Arrowhead of white flint, Cortaillod [807]
C	Arrowhead of bone, with remains of bitumen glue adhering, Port Conty [90]
D	Arrowhead of white flint, Port Conty [146]
E	Blade of white flint, with remains of bitumen glue, Port Conty [60]
F	Bone arrowhead, Cortaillod [826]
G	Adze of greenish grey stone, Auvernier [1992]
H	Butted holder, Auvernier [1979]
J	Rim of pot with pellet-ornament, Auvernier [2205]
K	Spurred holder, with axe of dark green stone, Bevaix [288]

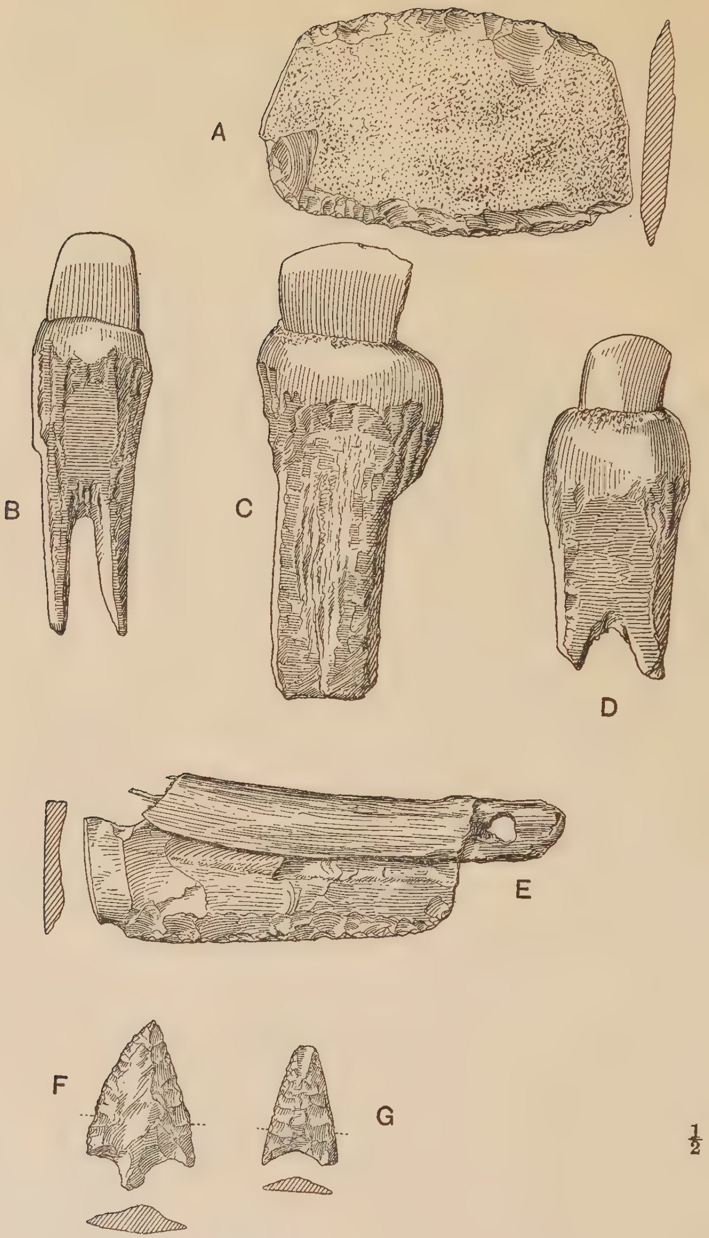


Fig. 9. TYPICAL OBJECTS OF UPPER (OR LATE) NEOLITHIC PERIOD, NEUCHATEL

EXPLANATION OF FIG. 9

A	Object of black flint, Auvernier [1651]
B	Cloven holder, Auvernier [2436]
C	Butted holder, Auvernier [1882]
D	Cloven holder, Auvernier [1865]
E	Blade of brown flint, with remains of perforated wooden mount [2547]
F	Arrowhead of pinkish-white flint, Auvernier [2364]
G	Arrowhead of white flint, Auvernier [2748]

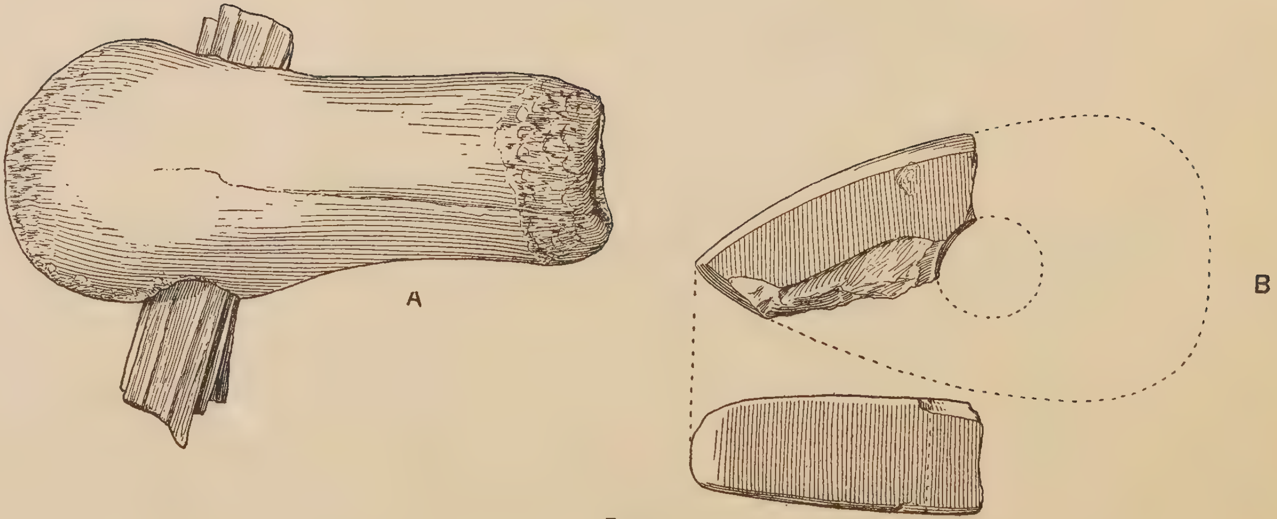
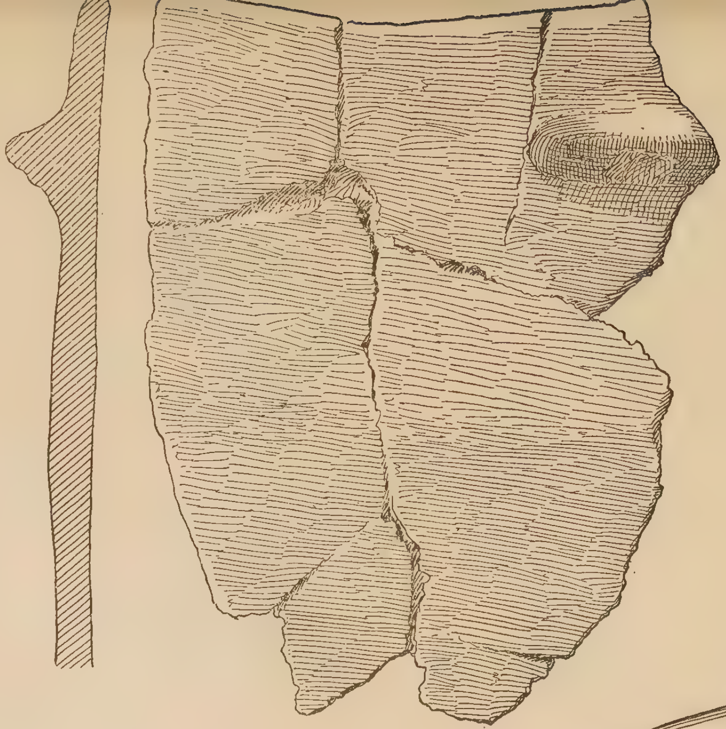
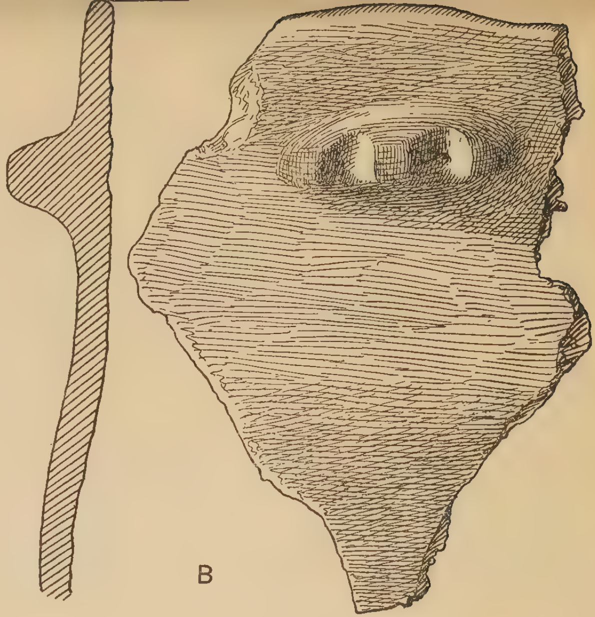
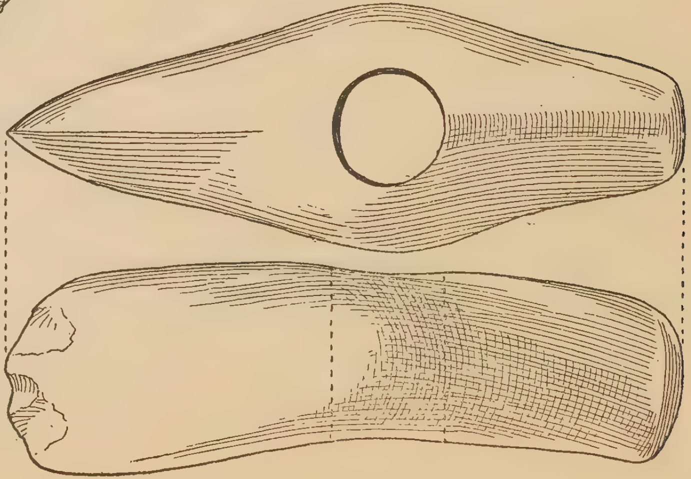


Fig. 10.

A Horn Hammer, Auvernier [2953] B Portion of perforated stone [2544], Middle Neolithic Layer, Auvernier







A Part of rim of pot, Auvernier [1753]

B ,, ,, ,, [2402]

C Perforated axe-hammer of black stone,
Bevaix [280]

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FIG. 11. TYPICAL OBJECTS OF UPPER (OR LATE) NEOLITHIC PERIOD, NEUCHATEL

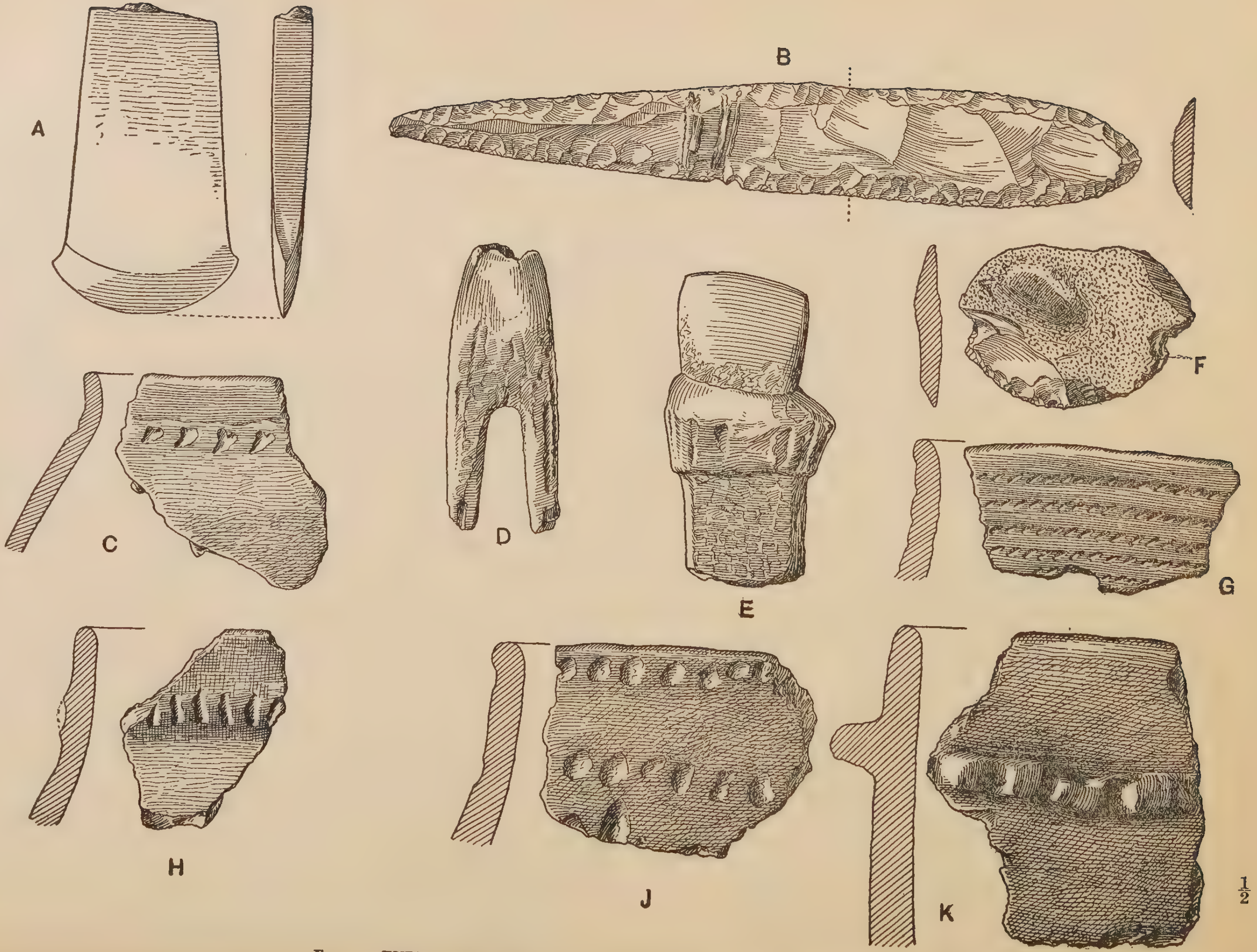


FIG. 12. TYPICAL OBJECTS OF THE ENEOLITHIC PERIOD, NEUCHATEL

EXPLANATION OF FIG. 12

A Copper axe, Bevaix [3003]

B Blade of Grand Pressigny flint, Auvernier [2752]

C Part of rim of pot, Auvernier [1598]

D Cloven holder, Auvernier [1819]

E Butted holder, Auvernier [1720]

F Object of white flint, Auvernier [1564]

G Part of rim of pot, with decoration resembling cord-ornament (*schnur-keramik*) Auvernier [1565]

H Part of rim of pot, Auvernier [2220]

J „ „ [2333]

K „ „ [2219]

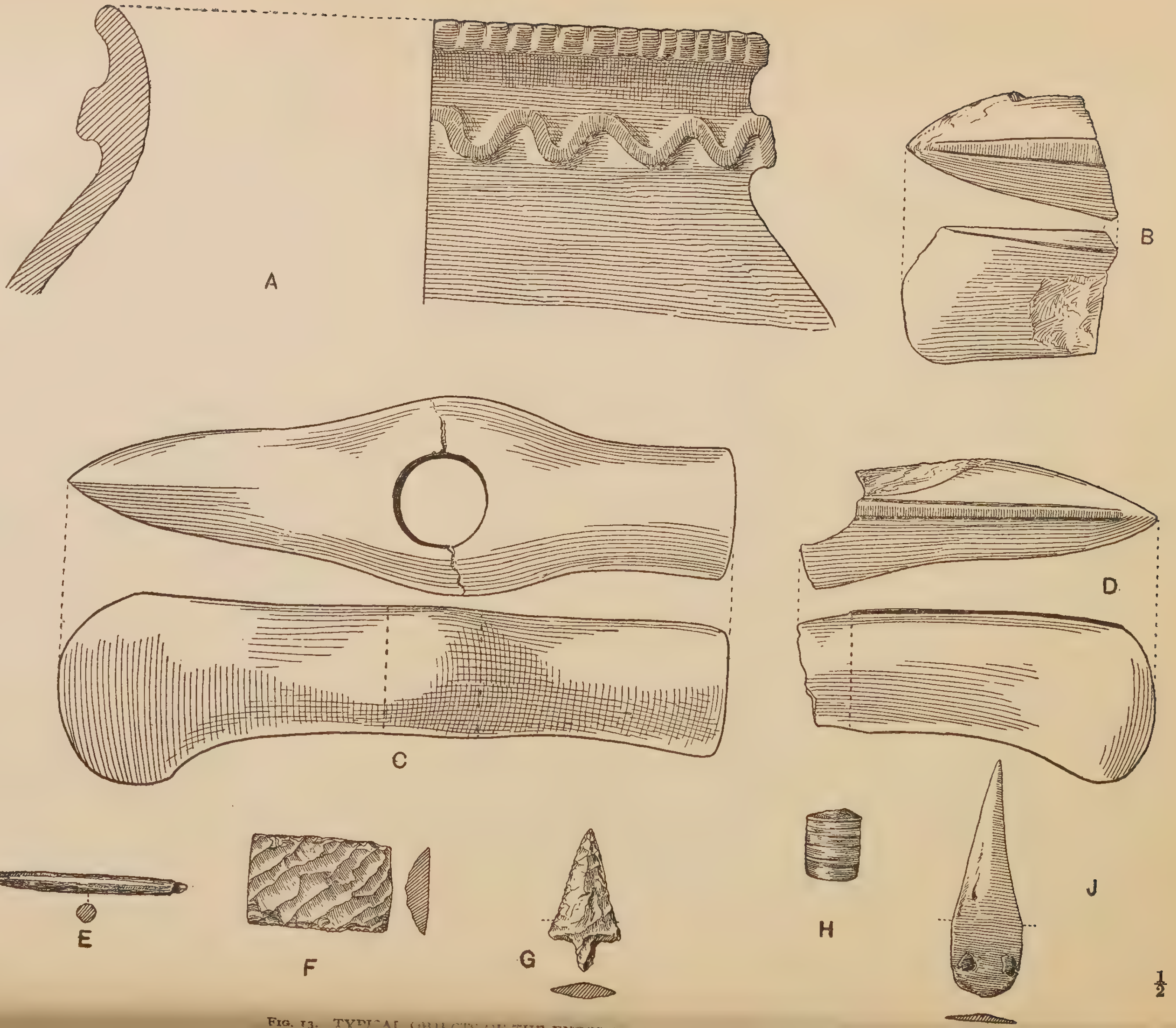


FIG. 13. TYPICAL OBJECTS OF THE

EXPLANATION OF FIG. 13

A Rim of pot, Auvernier [1868]

B Part of stone axe-hammer (black with white mottling), Auvernier [1610]

C Stone axe-hammer (black with white mottling), Auvernier [1611]

D Part of stone axe-hammer, Auvernier [1609)]

E Awl of copper, Auvernier [2780]

F Part of ripple-flaked blade of light brown Grand Pressigny flint, Auvernier [2227]

G Arrowhead of brownish-black flint, Auvernier [2299]

H Core drilled from perforation of stone axe-hammer, Auvernier [2730]

J Knife of copper, Bevaix [3021]

Stone Cists

by O. G. S. Crawford

CISTS are often met with on the open moors of Britain, and a brief account of them may therefore be of interest.

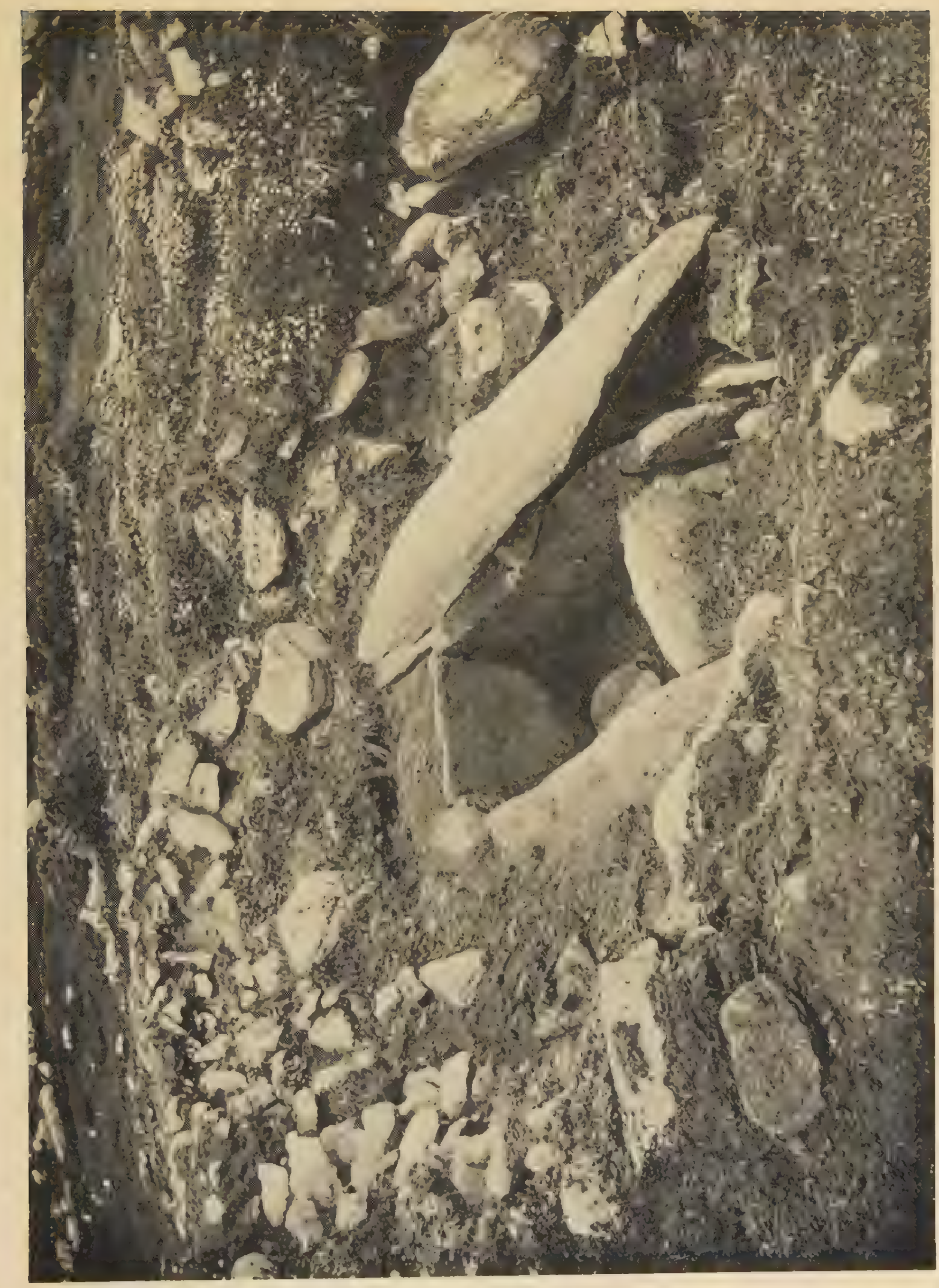
First, a few words about terminology. Our predecessors used also the words 'Kist' and 'Kist-vaen', and indeed the latter word still survives in some of our remoter western districts. 'Kist-vaen' is however an impossible word; it was invented by antiquaries to whom all prehistoric monuments were 'Celtic', requiring therefore a Celtic name. Since the original name was unknown, new ones had to be invented. In the days when the words of Authority were heard with undue respect and awkward questions were seldom put, those spurious terms obtained wide currency. The word 'cist' has long been used by Scottish archaeologists, and it is the one adopted by the British Ordnance Survey.

A cist is a small box consisting of four stones set in the ground at right-angles to each other and generally covered by a fifth. The dimensions vary, but the cist averages 2 feet in internal width by 4 feet in length and 2 feet in depth. It may originally have been either placed in a hole dug for it, or set up on the surface of the ground. In the latter case a protecting cairn or earthen mound was generally piled upon it, and the whole surrounded by a circular row of close-set largish stones. The result is then a typical cairn-circle.

A burial-chamber, on the other hand, consists of large—sometimes very large—stones; or the sides may be formed by a dry wall of small stones. The roof was either a large capstone, or a corbelled vault of small stones, or a combination of both. The most obvious difference is that of size; roughly speaking a burial-chamber is a room into which one can penetrate, whereas a cist is a mere box. Burial-chambers were formerly called 'dolmens' and 'cromlechs', and even the word 'Kist-vaen' was sometimes improperly applied to them.

Cists were probably introduced into Great Britain by the Beaker-folk about 1800 B.C. In Great Britain, at any rate, they are not

PLATE I

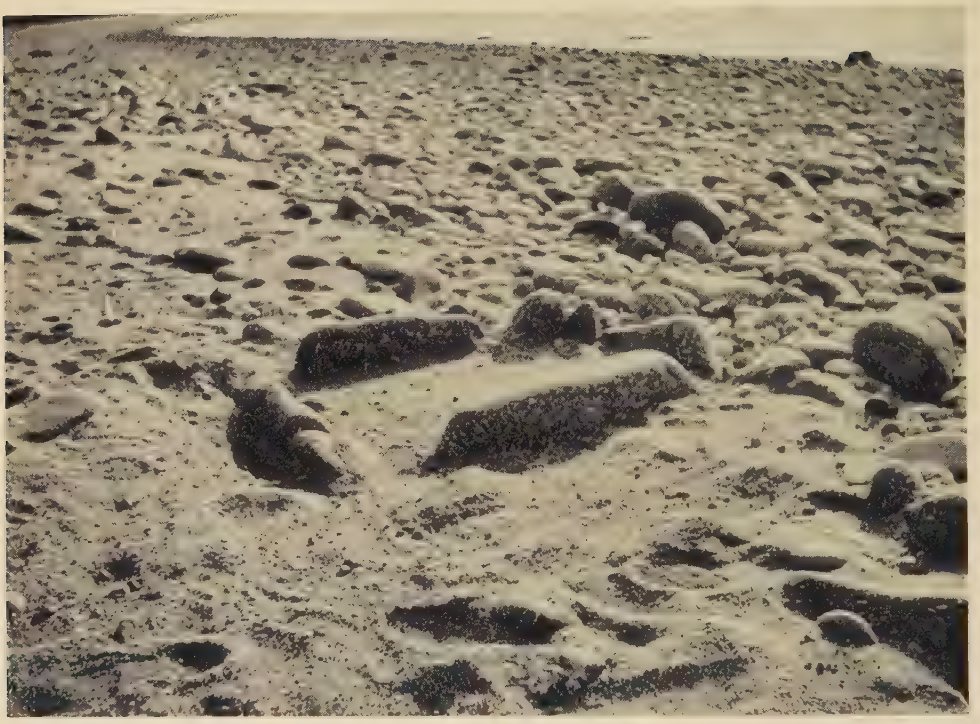


CIST ON SAMSON, SCILLY ISLES, EXCAVATED 1862

Ph. Gibson & Sons, St. Mary's

facing p. 418

PLATE II



CIST ON SEA SHORE, ST. MARTIN'S, SCILLY ISLES

Ph. Gibson & Sons, St. Mary's

'degenerate' burial-chambers. They were used for over 2000 years, and examples have been found containing objects of the Iron Age.*

It is probable that in certain regions they were the normal receptacles for the dead down to the introduction of Christianity, when cremation went out of use. They were not originally, however, designed for cremated interments. The cists of the earliest well-dated group (in eastern Scotland) contain the skeletons of Beaker-men.

The examples which we illustrate here are all typical in a general way but peculiar in small points. They seem likely therefore to serve excellently for the present purpose, since the specialist, to whom the *type* is well-known, will be interested in the abnormal features. Plate I shows a cist in a barrow on the northern hill of Samson, one of the Scilly Isles, now uninhabited. It was opened on 3 September 1862, under the direction of the owner, Mr Augustus Smith, M.P., for the benefit of a 'select party of Cambrian archaeologists'. When the capstone had been levered off, in the cavity beneath was found a deposit of burnt bones and nothing else. One remarkable feature of the cist consists in the grooves which have been cut in each of the larger side-stones, to allow the end-stones to be fitted more securely. So far as I know this feature is unique. The stone is granite and must have been hard to work with primitive appliances. 'The bottom of the sarcophagus [cist] was neatly fitted with a pavement of three flat but irregular-shaped stones, the joints fitted with clay mortar, as were also the interstices where the upright slabs joined together; as also of the lid [the capstone], which was very neatly and closely fitted down with this same plaster'. The cist is 3 feet 9 inches long by 2 feet wide (internal dimensions), and 2 feet 3 inches deep; the capstone is 4 feet by 5 feet 7 inches. An account of the opening is published in the 45th annual report of the Royal Institution of Cornwall (1863), pp. 50–53, but the measurements given there are wrong. A long quotation from Mr Smith's paper will be found in *Naenia Cornubiae*, by W. C. Borlase (1872), pp. 159–62. The presence of clay mortar is interesting; I observed fragments of similar mortar, mixed with grit, in a chambered barrow on Normandy Down, St. Mary's, and it has remained in use on the islands almost to the present day.

The other two cists in the Scilly Isles illustrated here are peculiar in their present situation only—one is on the sea-shore and the other in the middle of a road. Both were discovered by Mr Alexander Gibson, whose excellent photographs are reproduced. The cist on the shore (plate II) is on St. Martin's, between Crethus Hill and English Island Point, about 20 yards from the edge of the rushy bank, and at approximately high-water-mark. It is oriented north and south and is 3 feet long by 2 wide. It has now no capstone. The cist when found was full of coarse, gravelly sand and stones, which were cleared out; amongst this were parts of leg-bones (the joint-ends missing) and smaller fragments; then a piece of a human jaw, without teeth, and finally the skull. The facial portion was missing. The skull fell to pieces on removal but it and all the other pieces were preserved and the cist filled in again. Near by, to the west, were two or three other cists of the same type, and many years ago yet others were observed, both round this bay and at Lawrence's, to the west of Crethus Hill.

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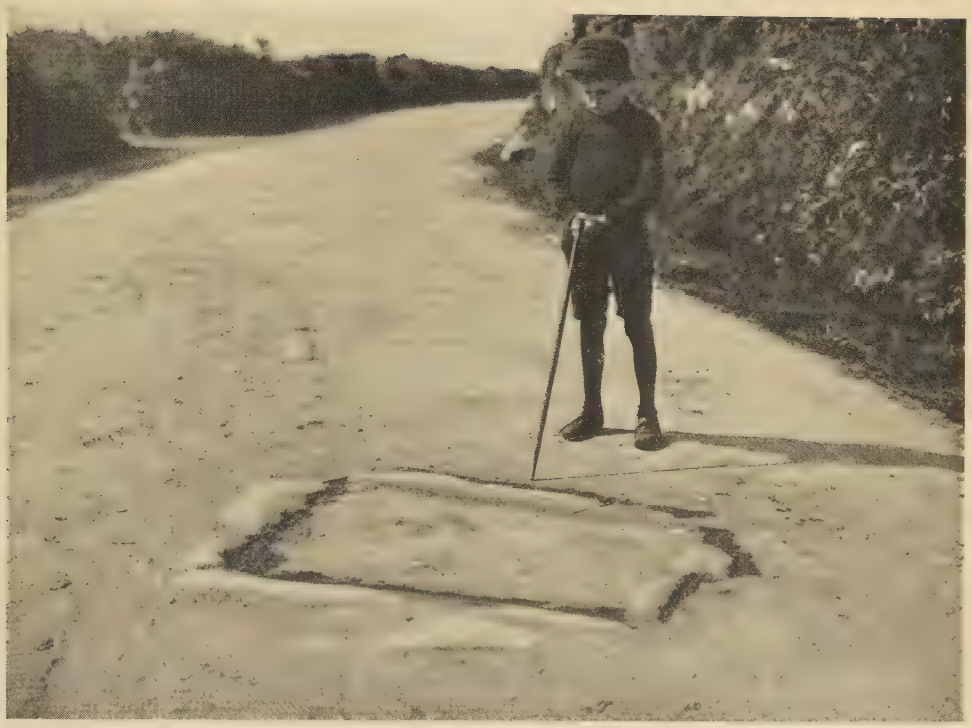
* Two Scottish cists belong to the Early Iron Age, one on Kippit Hill, Dolphinton (Lanarkshire), and the other at Moredun, near Gilmerton (Edinburgh). See *Proc. Soc. Ant. Scot.*, XXXVIII, 427 and LV, 45.

The cist in the road (plate III) is in Town Lane, about midway between Holy Vale and the Marconi Station, St. Mary's (lat. 49° 55′ 35.2 N, long. 6° 17′ 52.5 W). Nothing is known about it, but presumably it was found when the road was made by Mr Augustus Smith more than 80 years ago. It measures about 3 feet in length by 2 feet in width, and is oriented approximately NE–SW. There is said to have been another near it, but Mr Gibson has searched without success.

The earlier cists are generally found beneath barrows. Some at any rate of the later examples occur in groups, apparently uncovered by mounds. Such for example was the cemetery at Harlyn Bay, near Padstow in Cornwall. (Plates IV and V). The date of these graves is fixed by their contents and it is plainly not earlier than the Iron Age. The excavation was carried out at intervals over a long period and no proper account has ever been published; nor does any record appear to have been kept of the contents of each grave. The whole area was buried under sand-dunes, as may be seen from photographs taken at the time of excavation by Mr Gibson. The cists are formed of the local slates and contained skeletons and some iron, together with at least one bronze brooch of the late La Tène period. The objects are exhibited in a private museum on the spot. When in the neighbourhood in 1917 I made some notes and attempted to summarize the scanty records of discoveries in the immediate vicinity; these were published in the *Antiquaries Journal* (1921) I, 293–99. Other cemeteries of the same kind probably exist elsewhere on the north coast of

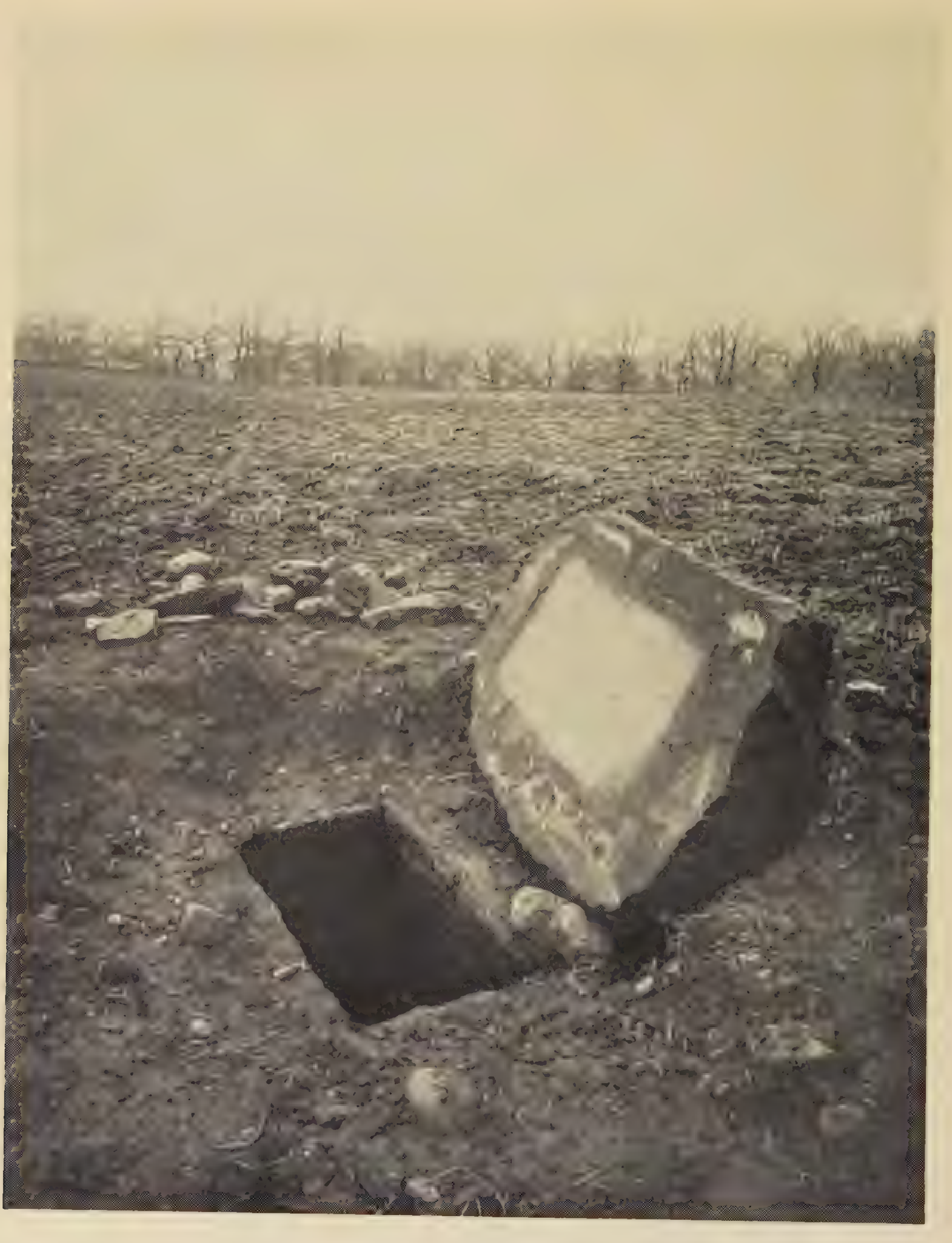
PLATE III



CIST IN TOWN LANE, ST. MARY'S, SCILLY ISLES

Ph. Gibson & Sons, St. Mary's

facing p. 420



CIST WITH WORKED CAPSTONE, CONTAINING BEAKER AND SKELETON,
WEST WHARMLEY, NORTHUMBERLAND, 1928
Ph. John Gibson, F.S.A.

Cornwall. Cist-cemeteries of precisely similar character are still used in the Aures mountains of Algeria, each grave having its votive pot or potsherd cast upon it.

These West Country cists are plainly quite different from, and later than, the numerous burial-chambers which occur there, such as those on Normandy Down and Porth Hellick Down, St. Mary's. The burial-chambers, or passage-graves, though for the most part not very large, are much bigger and belong to quite a different type. Though of earlier date they belong to the Bronze, not to the Stone Age. They are probably therefore later in absolute date than the Long Barrows of the Cotswolds and Wessex. They were always covered, wholly or in part, by a mound of earth and stones, itself surrounded by a circular retaining-wall of boulders or standing stones. Similar mounds occur in Cornwall, frequently enclosing structures which, if free-standing, would be classed as typical ' dolmens '.

Two instances may be cited of cists in the North of Britain, both recent discoveries. One, at West Wharmley, near Hexham (plate VI), contained a beaker. It was discovered in ploughing on 3 March 1928, owing to the capstone striking the plough. The cist was cleared out by the men, but Mr Hedley was able to retrieve some of the contents. The internal dimensions were:—length, 2 feet 3 inches; breadth, 1 foot 9 inches ; depth, 2 feet. The capstone weighs more than a ton, and is 5 feet long by 3 feet 3 inches wide by 1 foot thick. It is peculiar in having its ends ' dressed into a roughly circular shape. This has been done, not by percussion, but by wedging off segments with a round pointed implement. The wedge-holes are so small in diameter, and of such a depth, that it is difficult to believe the work can have been done by an instrument of bronze, having regard to the very great thickness and density of the stone, and the evident smallness of the tool-point used '. The beaker was mended and is compared with that from Roseborough (Greenwell, *British Barrows*, no. 197). The above account is taken from Mr Hedley's, published in *Proc. Soc. Ant. Newcastle-on-Tyne* (1928), ser. 4, III, 187–9. The photograph of the cist is published there, together with one of the beaker, and we are indebted to Mr Hedley and to Mr Gibson for permission to reproduce it again from the same photograph.

The last example we shall quote is a cist, found February 1926, at Piekie Farm, near Boarhills, Fife. It was discovered in the same way as the previous one, during ploughing; but by good fortune the ploughman did not clear it out. This was done by Dr David Waterston, of St. Andrews University. The cist was 4 feet long by about 2 feet wide and 1 foot 10 inches deep, and oriented east and west. It was covered by a roughly trimmed rectangular capstone. No pottery was found ; but the skeleton was well preserved, and was that of a man of the Beaker-type. A full account is given by Dr Waterston in *Proc. Soc. Ant. Scot.* (1927) LXI, 30–44. With it was a single white quartz pebble (see ANTIQUITY, II, 358).

This cist is typical of the many which have been found in eastern Scotland. For further information see Rice Holmes,[1] and the references there given.[2]

Similar or analogous cists are abundant in Wales, on Dartmoor, and indeed in almost every stone-producing region of Britain that was inhabited in prehistoric times. Examples have been recorded from the Cotswolds,[3] from the Marlborough Downs,[4] from the Isle of Wight,[5] and from Kent.[6]

Both in time and space their distribution is extensive ; and cist-burial was evidently the commonest method employed in Britain through prehistoric times, when suitable materials were available.

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[1] *Ancient Britain*, Oxford, 1907, p. 428.

[2] To these may be added the illustrated *Catalogue of specimens from prehistoric interments found in the N.E. of Scotland, and preserved in the Anthropological Museum, Marischal College, Aberdeen*, by R. W. Reid, M.D., 1924; *Proc. Soc. Ant. Scot.*, XXXIX, 418 ; and Mr Callander's numerous notes on cists in *Proc. Soc. Ant. Scot.* XL, 23; XLI, 116 ; XLII, 212 (urn in cist) ; XLIII, 78 (five cists) ; XLVIII, 194; L, 150 ; LIII, 15 ; LV, 45 (Iron Age cist) ; LVI, 32 ; LVII, 299 ; LVIII, 286.

[3] Crawford, *Long Barrows of the Cotswolds*, 1925, pp. 18, 19.

[4] *Proc. Arch. Inst. Salisbury* (1849, published 1851), p. 107.

[5] *Proc. Soc. Ant. Lond.* ser. 2, XXV, 191.

[6] *Proc. Soc. Ant. Lond.* ser. 2, XVII, 376-7 ; 6″ O.S. map, Kent, 31 SW.

Massilia and Early Celtic Culture

by J. M. de Navarro

HALLSTATT and La Tène are the names given to the first and second phases of the pre-Roman Iron Age. They are derived from the sites where objects characteristic of the respective cultures were first identified, neither Hallstatt nor La Tène having any claim to be considered as the cradles of the cultures named after them. The former lies in Upper Austria. La Tène (' the shallows ') is situated in Switzerland at the eastern end of the lake of Neuchatel.

The upper limit for the chronology of the Hallstatt Period is a vexed point. If by Hallstatt we mean a period when iron was in general use, it can hardly have said to have begun before the ninth century B.C. ; if we regard it as denoting the time when Villanovan[1] and other contemporary influences first made themselves felt in Central Europe, it can hardly have begun later than *c.* 1000 B.C. Reinecke would even put it back as far as *c.* 1200 B.C. The lower limit is somewhat easier to define. Generally speaking it came to an end *c.* 550–500 B.C. ; but in some districts it persisted until *c.* 400, while in north-east Germany and other remote areas, the La Tène culture cannot be said to have succeeded it until *c.* 150 B.C., or even later.

Reinecke divides the Hallstatt period into four phases ; Déchelette into two.[2] It is with Reinecke D, which roughly corresponds to Déchelette II, that we are concerned. The dates assigned to this phase are given as follows :—

Reinecke, *c.* 700–550 B.C. and in some districts later ; Déchelette, *c.* 700–500 B.C.

The art of the Hallstatt Period, for the most part rigidly geometric, is largely the outcome of Bronze Age sources, though a tendency towards figural ornamentation, derived from Italy, also asserts itself. But if one may generalize, the Hallstatt style is mainly an exaggerated development of older influences. Not until it was in its last phase did the Hallstatt world really come into contact with Greece.

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[1] For account of Villanova period see D. Randall-MacIver in ANTIQUITY (1928) II, pp. 134–140.

[2] For Reinecke, see his articles on the four Hallstatt phases in Lindenschmidt's *Altertümer unserer heidnischen Vorzeit* (=AuhV) V, pp. 144, 231, 235, 315 and 399 ; For Déchelette see his *Manuel*, II, 2, p. 622 f.

The La Tène culture first came into being *c.* 550 to 500 B.C.; in Switzerland, and in the south-westernmost parts of southern Germany not until *c.* 400. Paul Reinecke who, more than any other authority, has contributed to our knowledge of this period, divides it into four phases A–D,[3] A and B corresponding to Déchelette I; C and D to Déchelette II and III. The importance of this twofold division of La Tène I has not yet been fully grasped by English and French archaeologists: with the possible exception of the bronze bowl from Cerrig-y-Drudion (*Ant. Jour.* (1926) VI, p. 277), phase A is unrepresented in these islands; not so in France. Without recognizing this subdivision of La Tène I, it is hardly possible to obtain a clear idea of the genesis of the La Tène culture. The phase which most concerns us is phase A. This, according to Reinecke, began *c.* 550 and ended *c.* 425 or 420 B.C.[4]

The genesis of the La Tène style was due to a fusion of older elements, with more or less contemporary Greek influences. The former were technical as well as stylistic; the latter, chiefly stylistic. The plant-motifs, which, with their geometrical derivatives, are the most characteristic feature of La Tène art, are mainly derived from classical prototypes—the palmette, free-tendril and other patterns. The zoomorphic and anthropomorphic elements mostly date from phase A.

The zone in which the culture of La Tène A held dominion extends roughly from eastern France to Bohemia. For convenience, it may be divided into a Central, a Western and an Eastern area. The first consists of the Middle Rhenish and adjacent regions, and is best represented by the famous group of burials known as the ‘ Chieftains’ Graves ’, with their rich tomb-furniture of gold and bronze ornaments, their weapons and imported bronze vessels of Greek or Graeco–Italian manufacture. The Western area lies in east and north-east France. The rich chariot-burials of the Marne region mostly date from phase A. Here Greek or Graeco–Italian bronze vessels occur, though not in such profusion as in the Rhenish Chieftains' Graves. Greek pottery has come to light on several sites in the Western and Central areas.[5] The Eastern area (east Bavaria, west Bohemia and southern Thuringia) in certain respects differs fundamentally from the other two. Reinecke observed these differences over a quarter of a century ago,[6] and considered that they were due to our Central and Western areas being subject to Greek influence which came by way of the Hellenic colonies in southern France, while the Eastern area (where the Greek influence is far less strongly felt) derived its southern inspiration mainly from Italy, by way of the Adige–Brenner route. Since then Déchelette and others have challenged the view that the Greek influence from southern France reached the La Tène zone prior to *c.* 300 B.C. And although little has been written on this subject in recent years, these criticisms have won increasing support.

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[3] See his important study *Zur Kenntniss der La Tène–Denkmäler, der Zone nordwärts der Alpen*, in the 1902 *Festschrift des Römisch–Germanisches Central-Museum zu Mainz* (=Mainzer Festschr. 1902).

[4] *Bayerischer Vorgeschichtsfreund* (1925) V, p. 49 f. Schumacher's dates for this phase are:—from the end of the sixth century to *c.* 400 B.C.; see Ebert's *Reallexikon*, VIII s.v. Mittel-und Süddeutschland, p. 266 f. Déchelette assigns the fifth and fourth centuries to his La Tène I, see his *Manuel*, II, 3, p. 930 f.

With the downfall of its great Bronze Age civilization, the east Mediterranean area ceased to have any great influence on the cultures of Central Europe, but after an interval of approximately five centuries, during the last phase of the Hallstatt Period, the influence from Greece (I use the word in its widest sense, including the whole area of Hellenic colonization) made itself felt once more. It can best be traced in a small group of imported metal objects and pottery, found in France, Switzerland and south-west Germany, associated with antiquities dating from phase D of the Hallstatt culture (Déchelette's Hallstatt II). A short summary of these imports is necessary before attempting to determine the direction by which that Greek influence reached Central Europe.

A. METAL OBJECTS. (Finds marked with an asterisk denote tumuli with chariot-burials).

1. *Bronze vases.* Bronze tripod and bowl ornamented with bronze griffons' heads:[7] La Garenne, near Chatillon, Cote d'Or* (Déchelette, *l.c.*, II, 2, p. 647).

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[5] For convenience sake I shall allude to the above Western and Central areas as the Celtic Zone, for there is good reason to believe that during the latter part of Hallstatt D they formed part of the area occupied by the Celtic peoples (see my 'Coming of the Celts' in the *Cambridge Ancient History*, VII, p. 54ff=CAH, VII.) Whether the above Eastern area was already settled by Celtic peoples or not is still a matter of dispute.

[6] *Mainzer Festschr.*, 1902, p. 56 f.

[7] These and the griffon's head from Sens were undoubtedly of Greek manufacture (cf. Déchelette, *l.c.*, II, 2 figs. 221 and 223). If these heads are of Ionian workmanship, they doubtless reached the Celtic area by way of Massilia: Massilia was a Phocaean colony and Phocaea was one of the principal cities of Ionia. See Reínecke, AuhV, V, p. 329. Compare also Herodotus, IV, 152.

A bronze '*hydria*': Grächwyl, Canton Berne,* see plate I. (Tschumi, *Urgesch. des Schweiz*, p. 116).

The early wine flagons on pedestals, with trilobe mouth and bulging body, see fig. 1: Kappel (Baden)*—handle and pedestal only (Wagner, *Fundstätten und Funde*, I, p. 211). Vilsingen, Hohenzollern*—also in fragments, see plate II. (*Zeitschr. für Ethnologie*, 1900, p. (482)). L'Agnel near Pertuis, Vaucluse (*L'Homme Préhistorique*, 1909, p. 204, cf. Déchelette, *l.c.*, II, 2, fig. 308.3).

A griffon's head similar to those from La Garenne was found at Sens, Yonne (Déchelette, *l.c.*, II, 3, p. 1598).

The bronze bowls with beaded rims, found at Hundersingen,* Portalban, etc (see Reinecke, AuhV. v, p. 328, f. no. 1033), though originally Greek types, may have been copied elsewhere.

The same may apply to the large bronze cauldrons with iron ring handles discovered at Hundersingen* and Klein Aspergle, Württemberg, etc. (Ibid. p. 329, no. 1034).

2. *Weapons*. Greek javelin heads of an early type were found on the following sites :—Pourrières, near Marseilles, Camp du Rouret, Alpes Maritimes and in a Late Hallstatt tumulus at Alaise, Doubs (see Clerc, *Massalia*, I, p. 258).

M. Clerc tells me that a Greek helmet of the sixth century has recently been found in Vaucluse. A Greek greave was found at Roquefort, Alpes Maritimes (Clerc, *l.c.*, I, p. 259 f.).

B. Pottery. Greek pottery has been found on a number of sites in southern France (see Clerc, *l.c.*, I, p. 340 ff.); among other finds, a Protocorinthian cup was unearthed in a Late Hallstatt tumulus near Pertuis, Vaucluse (see Déchelette, *l.c.*, II, 2, fig. 252), and a *lecythos* with black palmettes at Voiron, Isère (*Bull. de Corresp. Hellenique*, 1884, p. 193).

The finds from the Camp de Château-sur-Salins (Jura) are of greater importance. The Camp de Château is a fortress dating from the end of the Hallstatt and the earliest La Tène period, a stratified site carefully excavated by M. Piroutet.[8] Fragments of red- and black-figured Attic vases and of unpainted Greek *amphorae* were found with Late Hallstatt fibulae and other antiquities. The Camp de Château, though perhaps the most important, is not the only site in that region

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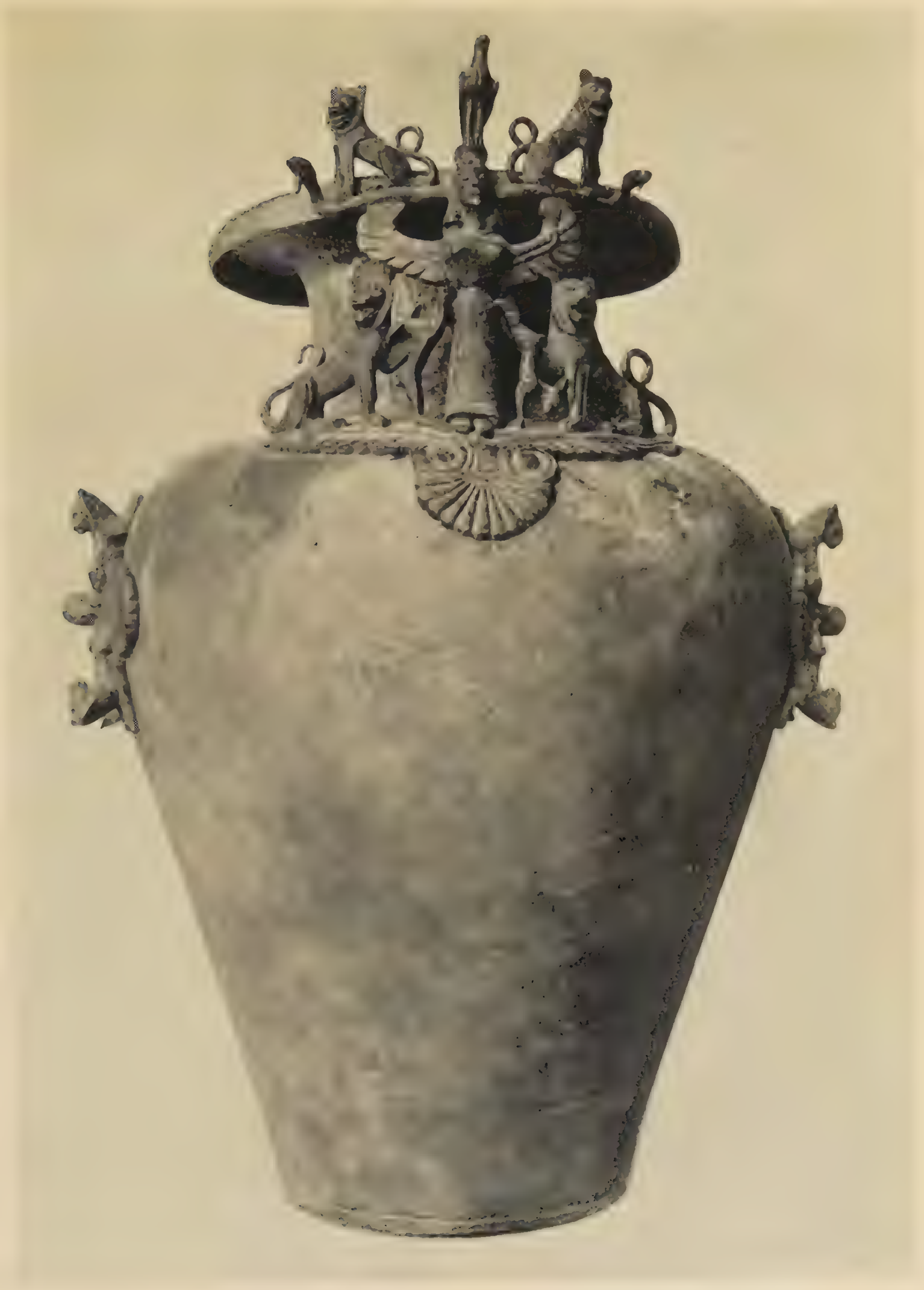
[8] *Revue Archéologique* (=RA) 1909, I, pp. 193 ff.

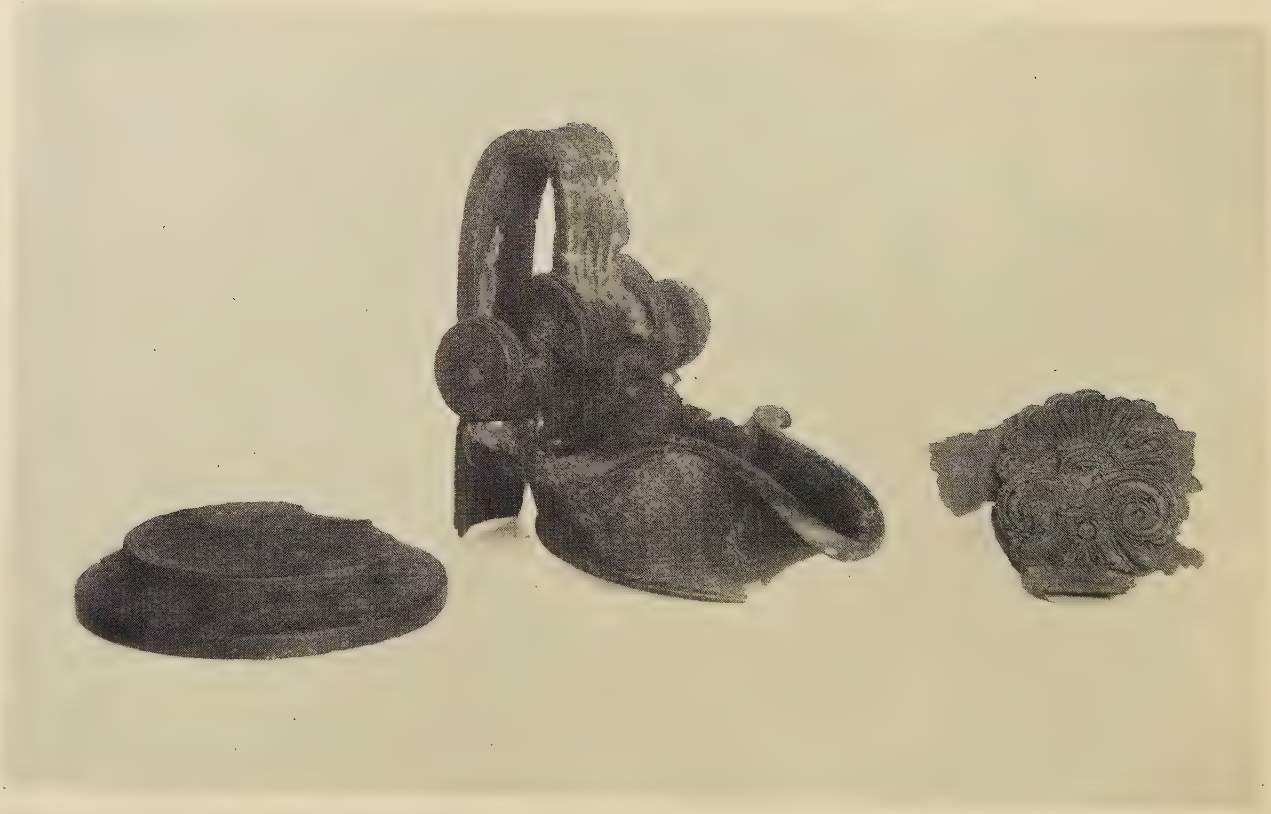
PLATE I



THE 'HYDRIA' FROM GRÄCHWYL (CANTON OF BERNE)
By courtesy of the Bernisches Historisches Museum Authorities

facing p. 426

PLATE II



THE FLAGON FROM VILSINGEN (HOHENZOLLERN)

By courtesy of the Fürstlich Hohenzollernsches Museum Authorities Sigmaringen which yielded Greek pottery. Three Greek *amphorae* were found in another Jura camp, Mont–Guérin ; several in the tumuli at Mantoche (Hte. Saône) and one in a barrow at Mercey-sur-Saône (Hte. Saône).[9] The last two sites Déchelette assigns to his first La Tène Period. The above group of antiquities are nearly all found in Hallstatt contexts and date from the seventh and sixth centuries.

During La Tène A, this Greek (or ultimately Greek) influence attained to a still greater importance. There is a whole series of imported bronze objects in the Celtic area, *stamnoi* (see plate III), wine flagons no longer with round pedestals and trilobe mouths, but with flat bases and beaked spouts (hence the German name *Schnabelkanne*—fig. 2), and other types. Further to the east, their occurrence is more sporadic. A full inventory with a map (the geographical positions of some of the sites on the latter are inaccurate) is given in the last of the four volumes of Déchelette's *Manuel* (p. 1599 ff.).[10] It is yet to be seen how far these vessels are of Greek or Graeco–Italian (Greek colonies in Italy) workmanship, and how far they are Etruscan or wholly barbaric copies; the last-named are easier to distinguish (*e.g.* the beaked flagon from Klein Aspergle). But the influence of the late archaic and classical Greek styles upon more or less contemporary Celtic art is very strong, whether more directly transmitted through Massilia by way of the Rhône, or less directly through barbaric, Etruscan or Italian copies. This is particularly noticeable during phase A of the La Tène Period. Yet side by side with fairly faithful imitations of Greek ornamental motifs, we already begin to meet with a conscious stylizing of the classical prototypes. In the ensuing phases, this process grew so marked that it is often difficult to recognize the classical parentage of many of the Celtic designs. This, no doubt, is partially due to the very noticeable decrease in the number of classical imports found in the trans-Alpine regions during La Tène B.[11]

Having given a brief sketch of these Late Hallstatt and Earliest La Tène imports, let us try to retrace the routes along which they passed, beginning with the Hallstatt group.

Leaving aside the Adige–Brenner–Elbe highway which, even at the time we are speaking of, had linked up Italy with Jutland for at

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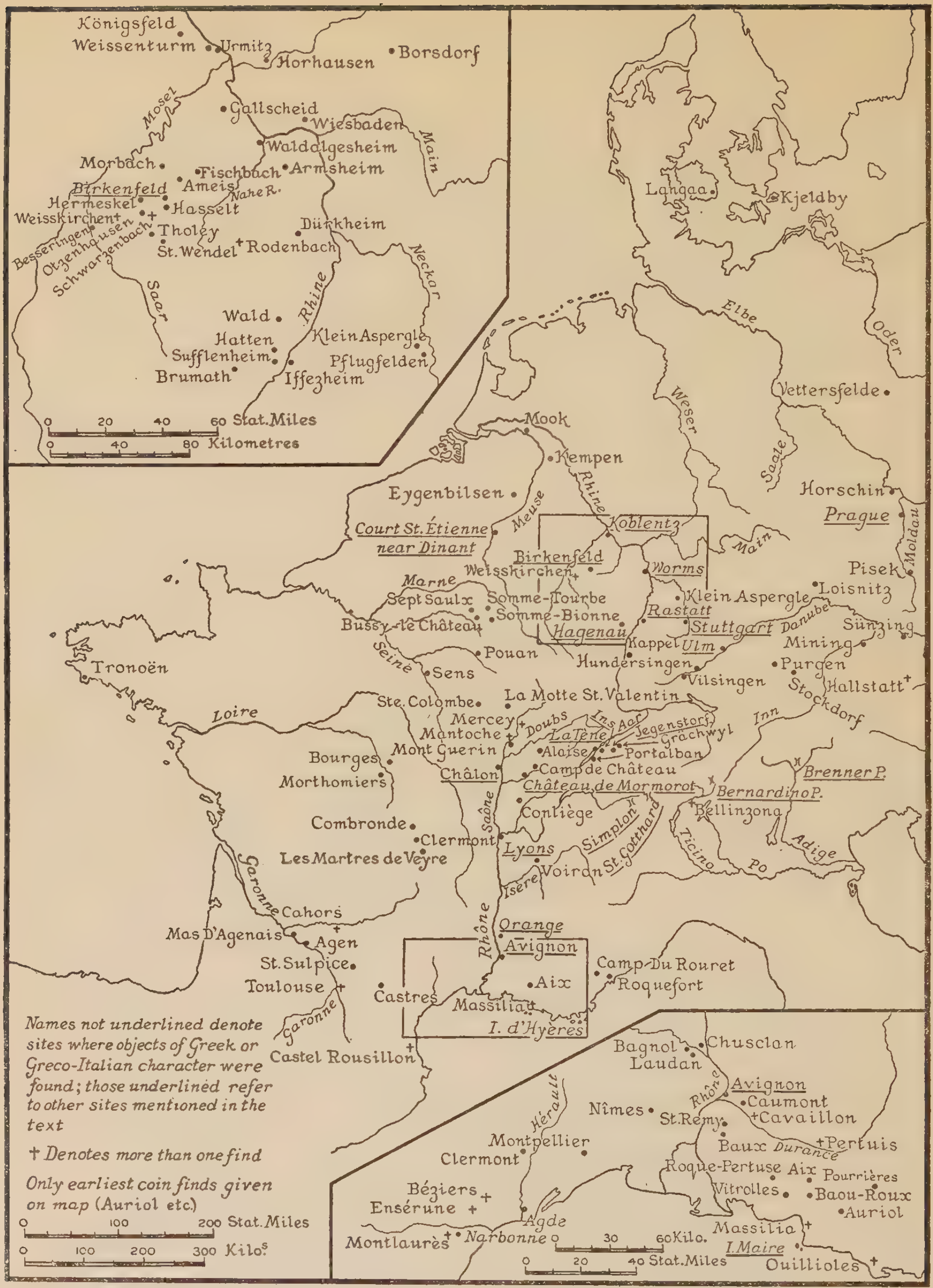
[9] *L'Anthropologie* (1918–19) xxix, p. 222 ; Déchelette, *l.c.*, II, 3, p. 1047 f.

[10] The French material for the map in this article is partly based on the above, and partly on Joulin (RA, 1910, II, p. 1 ff.) and Clerc's *Massalia*, I).

[11] Greek coins first appear in the Celtic area during this phase, and payment by coin may have somewhat affected the more primitive method of trade by barter.



THE DISTRIBUTION OF GREEK AND ITALO-GREEK IMPORTS IN THE TRANSALPINE AREA
(HALSTATT D—LA TÈNE B)

least a thousand years,[12] and along which the Italian stimulus reached the Eastern La Tène A area, two main routes are open to discussion: the Ticino–Mesocco–Bernardino–Rhine and the route which passed up the Rhône from southern France. The Simplon and St. Gotthard passes, partially owing to the bad Sub-atlantic climate conditions (see below p. 442), were of no importance at this period; and although the route over the Great St. Bernard was in existence the evidence does not warrant our regarding it as one of the main cultural highways between Italy and the barbaric North.[13]

It has been argued that the '*hydria*' reached the Berne area from Italy by way of the Ticino–Rhine route. But, from a purely geographical point of view, the latter would be a devious way for a Greek import made in south Italy to reach that district. It should also be noted that this '*hydria*' belongs to a cycle of forms unknown to Upper Italy. The most northerly objects which show any stylistic resemblance to the Grächwyl '*hydria*' are the bronze handles cited by Neugebauer from the Marche region.[14] The '*hydria*' is considered by Neugebauer as having been made under Peloponnesian (probably Laconian) influence in one of the Greek workshops of southern Italy.[15]

Turning to the pottery, we have as yet only one connecting link between Provence and Lyons—the *lecythos* decorated with black palmettes from Voiron. But north of that zone finds of this nature are better represented. We have already alluded to the Greek *amphorae* found at Mantoche, Mercey, Mont Guérin and the Camp de Château. Furtwängler pronounced the *amphora* from Mercey and one of those discovered at Mantoche to be of pure Greek manufacture, and, in assigning them to the sixth and fifth centuries, noted that they corresponded in form to representations of *amphorae* on red-figured vases of the severe style.[16] The finds from the Camp de Château furnish evidence of a yet stronger nature. At a slightly lower level than the stratum which yielded black-figured Attic ware (VIth century) sherds were found of wheel-made pottery decorated with undulated lines, and indigenous to Lower Provence.[17] Examples of this 'Ligurian' pottery were discovered at Château de Mormorot (Jura), and at Court St. Etienne (near Dinant in Belgium) in a late Hallstatt burial.

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[12] See *Geograph. Journal* (1925) LXVI, pp. 484 ff.

[13] Although coin-finds show that an overland-trade existed between Massilia and Upper Italy in the fourth century, there is little evidence for close relations between those regions over the West Alpine passes during the Hallstatt D and La Tène A phases.

[14] *Römische Mitteilungen* (1920) XXXV, p. 403 f. (cf. Randall-MacIver, *Iron Age in Italy*, pl. 30 and p. 134).

[15] *Archaeolog. Anzeiger*, 1925, cols. 183–8 and 204.

[16] RA. (1909), I, p. 209. One of the fragments from Mont Guérin was of a ware identical with the *amphora* from Mercey.

From the above it is clear, as Piroutet has already observed,[18] that trade relations were in existence during the sixth century between the Greek colonists in southern France and the Celtic population of the Saône–Seille–Doubs area, relations in which the Ligurians probably acted as middle-men. But did this trade effect southern Germany ?

Although that area might appear to have been supplied by the Bernardino–Rhine route, the distribution of the earlier wine-flagons (Pertuis, Kappel, Vilsingen) and the bronze javelin-heads (Camp du Rouret, Pourrières, Alaise) points to the Greek influence having reached south Germany from southern France. Neither of these types has come to light in Upper Italy. From a geographical standpoint there is nothing to prevent the route which linked up the Franche Comté and southern Germany from proceeding along the Doubs to the Montbéliard region and on through the gap of Belfort to the Rhine.[19] In this connexion it should be noted that close cultural relations existed during the Hallstatt period between Württemberg and the Alaise district ;[20] and Alaise, with its thousands of Hallstatt tumuli, lies in the department of Doubs, at no great distance from Salins, overlooking which stands the Camp de Château, the stratified site which yielded the important finds of Greek pottery and the 'Ligurian' sherds.

Further to the west, the evidence is less striking, but we have the bronze griffon's head from Sens. The distribution of sixth century and later southern imports in south-west France, points to a route along the Garonne (see below pp. 433, 437). Some of the imports referred to above (on p. 425 f) were actually made in the seventh century. The earliest Greek pottery found at Fort St. Jean (on the north side of the old harbour of Massilia) dates from the latter half of the seventh century and shows the Greeks had established contact with that region during the half century preceding the traditional date of the colony's foundation.[21] It is not impossible, therefore, that the earliest imports reached the Celtic and adjacent areas between the years 650–600 B.C.

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[17] This type of pottery was unearthed at Fort St. Jean (Marseilles) in association with Greek and Italian sherds dating from the seventh to the fifth century B.C.

[18] *L'Anthropologie* (1918–19) XXIX, p. 215 ff.

[19] In the fifth century the Greek influence appeared to have reached the Rhine by another route: see below, p. 437 f.

[20] See M. Piroutet's *Contribution sur l'étude des Celtes*, in *L'Anthropologie* (1918–19) XXIX and (1920) XXX, especially what he has to say concerning the Alaise–Württemberg group.

Judging from the increase in the number of southern imported objects found in the Celtic area during La Tène A (beaked flagons, *stamnoi*, etc.), the relations between those regions and Massilia would seem to have become greatly intensified. But a detailed study of these imports has yet to be made ; and it is not unlikely that some of them were of Etruscan, some of wholly barbaric manufacture. Never the less, there is good reason to believe that the relations between the Celtic area and the south of France continued uninterrupted during the earliest phase of the La Tène period. The closing of the Straits of Gibraltar towards the end of the VIth century, to other than Carthaginian traders, though not responsible for the opening of an overland route from Massilia, no doubt gave an added stimulus to its commerce with the barbaric region to the north.

With regard to coin-finds, Cary[22] considers the distribution of Greek coins in the barbaric area as a ' crucial test ' for the existence of a trade between the Greek colonies of southern France and the barbaric *hinterland*. The earliest types (prior to 450 B.C.) found in the Provence area (the treasures of Auriol, etc.) fall into two categories : those minted in the east Mediterranean area or southern Italy, and those in the barbaric style. Neither group is of much concern to us : whether we agree with Babelon in regarding the latter as struck by the west Mediterranean colonists, or, with Seltman, as actually imitated by their barbaric neighbours, neither they nor the imported types are found far enough north to be in the Celtic area. The same is true for the early Massiliote coinage (struck before 400 B.C.).[23] Cary, in noting this, dismisses the view that the Massiliotes dispensed with currency when trading with the Gauls, because the latter ' showed a marked avidity for coins and set up mints at an early date '. But, at the highest estimate, the first Celtic imitations of Greek coins date shortly before

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[21] *Comptes Rendus de l'Academie des Inscriptions et de Belles-lettres* (=CRAI) 1910, p. 422 ff. and Clerc, *l.c.*, I, p. 105. Ionian ware of the sixth century has been found on this site, at Baou-Roux, and at Vitrolles, near the Étang du Berre (Clerc, *l.c.*, I, p. 341).

[22] *Journal of Hellenic Studies* (1924) XLIV, p. 166 ff.

[23] Between 400 and 350 B.C. two new Massiliote types were struck. These have been found in northern and central Gaul. But as they were current for several centuries, they form an unsafe basis of argument (see Cary, *l.c.*, p. 175.) Cf. CAH VII, p. 49.

336 B.C., while minting can hardly have become common among the Celts prior to 300 B.C. Yet the finds from the Camp de Château show that a trade in Greek imports between eastern France and Lower Provence had been established during the sixth century. The above argument of Cary is therefore unsound ; and it would be safer to ascribe the absence in Celtic lands of Greek coins earlier than the fourth century to the fact that the Celts (not as yet in *immediate* contact with the Greek colonies) were not ripe for trading in currency, and still had recourse to the more primitive method of barter. The evidence of early coin-finds does not therefore affect the issue one way or the other.

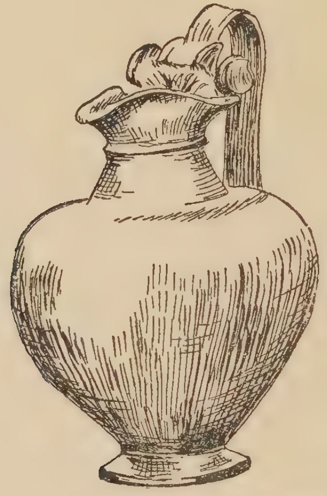

FIG. 1. EARLIER TYPE OF FLAGON. VILSINGEN (RECONSTRUCTED. SEE PLATE II)*

We have already noted that red-figured Attic sherds were discovered in the top stratum (E) at the Camp de Château (Jura).

Greek pottery has also been found in the following Celtic burials: Somme Bionne (Marne), La Motte St. Valentin (Hte. Marne), Rodenbach (Rhenish Palatinate) and Klein Aspergle (Württemberg).[24]

Since Déchelette published his monumental work, an important site has been discovered at Ensérune (Hérault),[25] about six miles south-west of Béziers. Here the learned and public-spirited M. Mouret has excavated upwards of a hundred and thirty-eight incineration graves. Among the more important metal objects are: swords of a La Tène I character, and of a curved Iberian type; La Tène I fibulae; girdle-clasps derived from the palmette and zoomorphic motifs, both varieties found in La Tène A contexts in the Celtic area. Coral is by no means poorly represented. The pottery, which is of exceptional interest, may be roughly divided into four categories: (1) red-figured Attic vases of the late fifth and fourth centuries, (2) 'Campanian' pottery of the fourth and third centuries, (3) Iberian pottery of the same date, (4) vessels of indigenous manufacture. With regard to the red-figured Attic vases, it should be noted that this was not the earliest type of Greek pottery to reach south-west France: examples of black-figured Attic ware have been found at St. Gabriel (near Tarascon), Béziers, Montlaurès and Clermont–Dessous (Lot et Garonne).[26] Although Mouret is probably correct in regarding Ensérune as an Iberian settlement,[27] he rather under-estimates the possibility of Celtic influence. The La Tène I swords and a gold earring (like Déchelette, *l.c.*, II, 3, fig. 542.2) assuredly point to relations between Ensérune and the Celtic world. I have spoken of Ensérune at some length. Owing to the finds from this site, it has been suggested that the cradle of the La Tène culture might lie further to the south-west than is generally supposed.[28] Until earlier burials have been discovered, one should beware, when speaking of the genesis of the La Tène culture, of over-emphasizing the importance of Ensérune: the majority of the graves date from the fourth and third centuries, the most ancient from the end of the fifth, whereas the Middle Rhenish 'Chieftains' Graves' and the rich chariot-burials of the Marne culture date from the fifth, Reinecke even placing the earliest of them in the second half of the sixth century.[29]

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[24] The references will be found in the last of the 4 vols. of Déchelette's *Manuel*. The latest of these vases dates from *c*. 450 B.C.

* I have to thank Mrs M. C. Burkitt for this drawing.

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[25] CRAI, 1916, pp. 397 and 469; 1918, p. 95; 1919, pp. 223 and 293; 1920, p. 31; 1927, p. 1. Fondation Piot: *Monuments et Memoires* (1924) XXVII, p. 45; *L'Illustration*, 24 April, 1926; *Corpus Vasorum antiquorum*, fasc. 6 (1927).

[26] Clerc, *l.c.*, I, pp. 342, 346, 348; Déchelette, *l.c.*, II. 3, p. 1598.

[27] Apart from the Iberian pottery and certain of the metal objects, Iberian inscriptions occur on some of the cinerary urns.

[28] CRAI, 1918, p. 96 f.

[29] This should be borne in mind when speaking of the place of origin of the above zoomorphic girdle-clasps. Mouret does not seem to realize this: cf. *Mon. et Mem. Piot*, XXVII, p. 52.

Another site in this district, where Greek influence is to be seen, is Montlaurès, about 2½ miles west of Narbonne.[30]. Here the foundations of the huts, cut into the rock, closely resemble a type of foundation discovered at Athens (see Déchelette, *l.c.*, II, 2, fig. 422). The earliest Greek pottery found here (black-figured ware) dates from the sixth century; but the majority of the sherds of Greek and Italo-Greek vases from the latter part of the fifth, to the third century.

Further to the east, in the Lower Rhône area, important finds came to light on the hill-fort of Baou–Roux, (near Marseilles). The earliest sherds found on this site belong to the Italian geometric cycle of pottery; but fragments of painted Ionian ware, black- and red-figured Attic vases, and later Cumaean pottery, were also discovered, not to mention other objects.[31]

Apart from Baou–Roux, the following sites in or near the Lower Rhône valley have yielded red-figured Attic ware :—Courtines and Petit Cerveau (both near Ollioules), Caumont, St. Jacques (close to Cavaillon) and Nîmes. Further up the Rhone, Greek *amphorae*, or *amphorae* made in Greek colonies in southern Italy, occurred on three sites to the north of Uzès :—Chusclan, Bagnols–sur–Cèze and Laudun.[32] North of these, I know of no Greek pottery of this period until we come to the Celtic area.

Classical writers speak of the Celtic peoples' great love of wine, and the evidence of archaeology not only bears out what they have to say on this point, but shows that there is a long history behind these references. Most of the imported vessels, whether pottery or bronze, were ultimately connected with the carrying, storing, mixing and drinking of wine. If, as in the case of the La Motte St. Valentin *stamnos*, they were used for cinerary urns, it does not mean that they were imported for that purpose, nor does it follow that they were all imported solely as *objets d'art*. In the 'Chieftains' Graves', we sometimes find a regular table service of bronze vessels; while the fragments of undecorated *amphorae* from other than sepulchral sites (Camp de Château and Mont Guérin) prove that the vessels can hardly have been imported as anything else than receptacles for the produce of the South.[33] But

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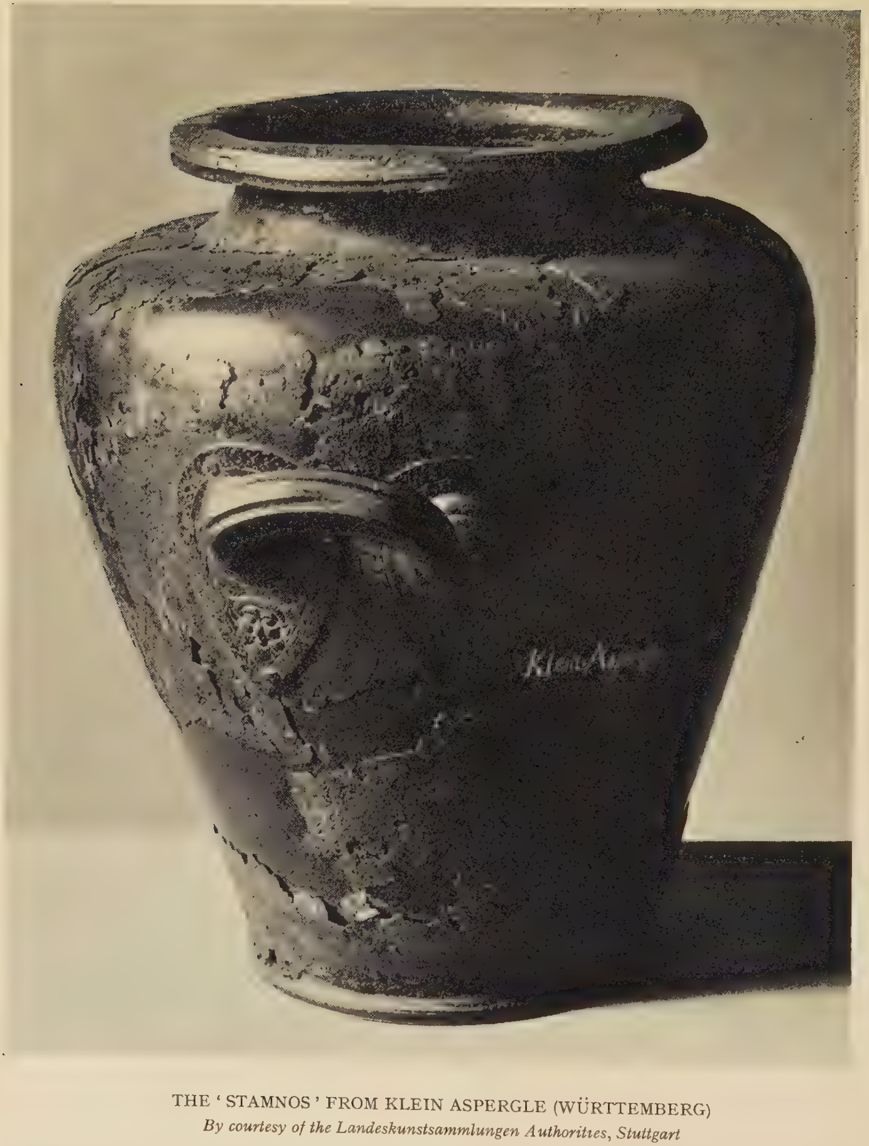
[30] CRAI, 1909, p. 981.

[31] *Annales de la Faculté des Sciences de Marseille*, XIII, fasc. 3, p. 84 ff.

[32] Clerc, *l.c.*, I, pp. 340–5, and Joulin, RA (1910), II, p. 7 f.

[33] Even supposing that some of these *amphorae* were used for the transportation of oil and not wine, we know that olive oil was one of Massilia's staple exports (see Clerc, *l.c.*, I, p. 279 f.)



THE ‘ STAMNOS ’ FROM KLEIN ASPERGLE (WÜRTTEMBERG)
By courtesy of the Landeskunstsammlungen Authorities, Stuttgart

is this true for such works of art as some of the bronze vessels or the decorated Greek pottery? In the 'Chieftains' Grave' at Weisskirchen (Rhein–provinz) the bronze *stamnos* was found to contain a resinous substance.[34] This, on chemical analysis, proved to be white pitch.[35] We know from classical sources that the ancients sometimes pitched their wines. Pliny (Hist. nat. XIV, 24) tells us that the Greeks, to give briskness to their wines when too flat, mixed them with potters' earth, pounded marble, salt or sea-water, the Italians with *brown* pitch, and that it was 'the universal practice both there (in Italy) and in the neighbouring provinces to season their wine with resin'. But later in the same work (XIV, 25), still speaking of wine, he tells us that the best quality of pitch is that from Mount Ida, though Vergil (Georgic II, 498) speaks of Narycian pitch. The latter reference is of interest. Narycia is the poetical name for the Greek colony Locri in southern Italy, and it has lately been suggested that many of the archaic Greek bronze vessels may have been made at Locri rather than, as hitherto supposed, at Tarentum.[36] Locri was in Bruttium, a region according to Pliny (*l.c.*, XIV, 25) that produced the most highly esteemed pitch in Italy in preparing vessels for the storing of wine.

The contents of the Weisskirchen *stamnos* not only shows that this practice dates back to the fifth and possibly even into the sixth century, but that those vessels were used by the Celts for wine, and seem, originally, to have owed their introduction into the Celtic area to the wine trade, which, as the *amphorae* from the Camp de Château and other sites show, probably started in phase D of the Hallstatt Period. If this conjecture is correct, the La Tène art may largely have owed its existence to Celtic thirst.

But from what region was this wine imported? We have good reason to believe that, although the vine was known in France in Quaternary times, the art of viticulture was first introduced into that country by the Massiliotes (Justin, XLIII, 4.2). It seems to have been confined to the Massilia area until *c.* 120 B.C.[37] Although Martial has little good to say of the Massilian wine, Posidonius the Stoic (apud Athenaeum, IV, 36) tells us that the Celts drank wine imported from that region, and also from Italy. Posidonius was born about 135 B.C.

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[34] The *stamnos* from Klein Aspergle (plate III) also contained a resinous deposit.

[35] Déchelette, *Collection Millon*, p. 123.

[36] Neugebauer, *Archaeol. Anzeiger*, 1925, col. 201 f.

[37] Billiard, *La Vigne dans l'Antiquité*, p. 81. I owe this reference to M.P. Charlesworth.

and was still living in the year 62. He travelled widely in Gaul, and as the civilization of the Celts depicted by Diodorus Siculus (who seems to have drawn his information from Posidonius' lost work) is that of La Tène II rather than the La Tène III, Posidonius' travels in Gaul may date from *c.* 100 B.C., or possibly a little earlier. By that time Italian wines had become famous,[38] but before the middle of the second century viticulture played little part in the economic life of Italy, the wine then drunk being almost entirely imported from Greece. Pliny (Hist. nat. XIV, 9) tells us that Apollodorus in his list of wines recommended to King Ptolemy (323–285 B.C.) does not mention any Italian varieties, as at that time they were not known (*Italicis etiam tum ignotis*). If this was true for the turn of the fourth and third centuries, how much less must viticulture have been practised by the non-Hellenic inhabitants of Italy from the seventh to the fifth centuries. During early times in Italy, wine seems mainly to have been used medicinally, and it is thought that Numa in his laws ordained that milk should be used in place of it at sacrifices owing to its rarity. The evidence all points to the Celts of our period importing their wine from the region around Massilia, or through Massilia from Greek lands ; and it is highly probable, therefore, that during the late sixth and the fifth century, when so many vessels of southern origin connected with wine were found in the Celtic area, the trade between that area and Massilia was maintained if not intensified.

Another substance imported by the Celts was coral.[39] Bronzes encrusted with coral frequently appear in La Tène I contexts in the Champagne and other areas. Pliny the Elder writes (Hist. nat. XXXII, 11) that this substance reached the Gauls from the Stoechades (the Îles d'Hyères), but coral also occurs off the Lesser Stoechades (the islands near Massilia). It is found today off the Île Maire, and those who seek it have seen and sometimes recovered *amphorae* lying 20 to 30 metres deep, although so far only types from the first century A.D. have been discovered.[40] But the Greater Stoechades were the most important coral fisheries of ancient times. Later, according to Pliny, the demand from India deflected the trade in coral from the Celtic region ; indeed, as Reinach has shown, there is a great falling off in the number of objects of this substance found in the Celtic area during La Tène II and III.[41] But it is interesting to note that coral first appears in the Celtic region during phase D of the Hallstatt period, the phase in which the Greek influence from the south of France first reached eastern France and south Germany.

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[38] Billiard, *l.c.*, p. 71.

[39] See S. Reinach's interesting study, *Le Corail dans l'industrie Celtique. Rev. Celtique* (1899) XX, pp. 12 ff. and 117 ff.

[40] Clerc, *l.c.*, I, 287 f.

Judging from the distribution of southern imports certain modifications in the routes took place during La Tène A. Although the main route still passed up the Saône into the Franche Comté and the neighbouring districts, the demand from a new district, the Champagne area, had also to be met with. A number of finds have been dredged up from the Saône at Chalon (Saône et Loire) ; most of them date from La Tène II and III,[42] but La Tène I objects are not lacking. Chalon is known to have been a point where a number of routes converged and it is not unlikely that the highway which connected the Champagne area with the Saône–Rhône complex, branched off from the former river at that point. Groups of southern imports to the west of the Loire and in the Garonne area would, from their geographical position, testify to connexions with the south of France rather than the Alpine passes. Further east, we have the Middle Rhenish ‘ Chieftains’ Graves ’ with their many southern imports. But as they lie north of a line from Hagenau to Ulm, it is not likely that the route by which the southern imports came, struck the Rhine as far south as it did in the Hallstatt Period (see above p. 430). During phase A of the La Tène Period, it would appear to have continued up the Saône (as well as branching off up the Ain), and struck across Lorraine towards Metz. From this point it reached the Rhine through at least four channels. The chief of these passed through the Birkenfeld–Nahe country, the heart of the Central La Tène A area; the other three made the Rhine to the east of Hagenau, near Worms and at Koblentz respectively.[43]

It remains to discuss the importance of the part played by the Ticino–Mesocco–Bernardino–Rhine route during Hallstatt D and La Tène A. From a purely geographical point of view, the Rhône-Saône route is the most direct way for southern imports to have reached the

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[41] The use of coral did not die out completely. It is found, for instance, on the Witham Shield.

[42] Hundreds of broken *amphorae* were found at this point. They date, however, from the first century B.C.

[43] Schumacher, *Siedlungs und Kulturgesch. der Rheinlande*, I, pl. 8. Judging from the imports in the Berne area, the Rhône-Aar–Rhine route was less important in La Tène A than Hallstatt D.

Celtic area in France; but Switzerland and south Germany might equally well have been supplied by the way of the former route. From the distribution of the cordoned bucket, the Etruscan gold pendants found in the Canton of Berne,[44] the occurrence of Etruscan spits at Chalon-sur-Saône and Somme-Bionne, not to mention the possibility of some of the beaked-flagons found in the Transalpine region being Etruscan or even upper Italian copies of Greek or Graeco-Italian prototypes, it might be argued that the Bernardino-Rhine route was of capital importance.

It is difficult to determine the direction by which the cordoned buckets reached the Celtic area. Whatever their place of origin, they are best represented in the Bologna and Este regions, and it would seem almost certain that it was from there that the examples found in the Transalpine area came; while some of them beyond a doubt must have entered the latter region by way of the Central and Eastern 'amber routes'.[45] The examples found on Hallstatt D and La Tène A sites in south Germany may well have come by the former way along its upper Danubian extension. But the occurrence of this type of vessel on a number of sites to the west of the Rhine[46] might point to their reaching that area by way of the Ticino-Bernardino-Rhine route, especially as examples have been found in the Bellinzona district.[47]

The occurrence of southern imports in that district is not as valuable as might on first sight appear. Neither Déchelette nor Ulrich realize the complexity of the problem presented by these and other Alpine finds; nor is it fully grasped by Randall-MacIver in his masterly *Iron Age in Italy*. Owing to the marked conservatism of these Alpine districts, objects are often found in association which elsewhere would be two to four centuries apart. Thus the chronology of the Bellinzona cemeteries is extremely obscure, and it is almost impossible to say if a grave containing Late Hallstatt objects actually dates from that and not a later period. Reinecke assigns a late date to this whole group of cemeteries. The chronological evidence afforded by finds in this zone is therefore unreliable, an objection which applies to the beaked flagons as well as the cordoned buckets from the Bellinzona cemeteries. Again, if the latter came by the Bernardino–Rhine route, how is it that we find no examples of the contemporary ' situla style ' in the regions which that route would normally supply ? For examples of the ' situla art ' abound in precisely those regions of upper Italy in which the cordoned bucket is most frequently found. No examples of this interesting style have occurred as yet in the area west of the region supplied by the Central ' amber route ' : it is quite foreign to France, Switzerland and the western parts of southern Germany. It seems not unlikely, therefore, that the cordoned buckets reached the upper Danubian zone by the Central route, and, that passing up the upper Danube, they eventually found their way into France. We know that close relations existed at that time between eastern France and the upper Danubian area.

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[44] See Déchelette, *Manuel*, II, 2, p. 283 f. A similar object (though in bronze) has come to light at Peterinsel (Tschumi, *l.c.*, p. 132). Tschumi thinks these pendants are barbaric imitations of Etruscan work, but Forsdyke, in a letter to me, regards them as actually Etruscan. At Ins and Jegenstorf they were found in Hallstatt D contexts.

[45] See my map facing p. 484 in the *Geographical Journal*, 1925.

[46] Déchelette, *l.c.*, II, 2, p. 771 ff.

[47] In graves 61, 62 and 68 at Molinazzo. A fourth example was also found there. *Re* the chronology of these cemeteries, see Mainzer Festschr, 1902, p. 102.

Again, although Greek pottery of the seventh to the fourth century is found in France and southern Germany, the hundreds of graves in the Ticino area have not as yet furnished a single Greek sherd of those dates.

But there is a still greater objection to the Bernardino–Rhine route being the highway along which the stimulus travelled that played so great a part in the genesis of the La Tène culture. Schumacher has shown that in Transalpine Switzerland and southern Germany, south of a line through Hagenau, Rastatt and Stuttgart to Ulm, the civilization of La Tène A is virtually unrepresented, and that in its place we find a survival of the Hallstatt D culture.[48] *If the stimulus which contributed so largely to the birth of the La Tène style came by the Bernardino–Rhine route, is it possible that the earliest phase of the La Tène culture should be altogether lacking in those regions which lie closest to the point where that route debouches from the northern slope of the Alps ?* It may be argued that this phase is equally lacking in the Rhône valley between Orange and Lyons. But in the former region we find a pertinacious and comparatively well-represented Hallstatt D culture, whereas in the Rhône valley hardly any grave-finds are known between the above two points. This may partially be due to the latter not having been as systematically explored, but in event of no such finds materializing, the district in question must be regarded as a ' corridor-district '. If the Rhône is in our days prone to flood, the bad climate of the Sub-atlantic period[49] must have rendered it a great menace to fixed settlers. Early traders were more or less birds of passage, and were free to choose favourable times for their long and often perilous journeys.

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[48] Ebert, *Reallexikon*, VIII, pp. 264–6.

[49] For these conditions, see C. E. P. Brooks' *Climate through the Ages*, 1926, p. 339 f.

We are now faced with a difficulty : an influence from those parts of Italy outside the area of Greek colonization is still to be reckoned with. How could it have reached the Celtic region without crossing the Alps ? Were the above Etruscan and Italian imports, other than cordoned buckets, shipped to Massilia, thence reaching the Celtic area by the above-mentioned routes ? Was there a connexion between Massilia and central Italy as early as the sixth and fifth centuries B.C. ? The most serious objection to such a possibility is historical rather than archaeological. After the fall of Phocaea in 540 B.C., part of that city's inhabitants founded a colony at Alalia in Corsica. In 535, the Carthaginians and Etruscans united against them ; a battle was fought off the coast of Sardinia which resulted in two-thirds of the Phocaean fleet being destroyed, and the seizure of Sardinia and Corsica by the Carthaginians and Etruscans respectively. But the allies suffered such severe losses that Herodotus tells us the Phocaeans won the battle. If they did, it was a somewhat Pyrrhic victory! After their flight from Alalia they founded the colony of Velia in Lucania. The years following the battle of Alalia were doubtless critical ones for the Phocaean colony Massilia, and scholars have stated that her commercial enterprise was greatly curtailed thereby. But, as far as Massilia's eastern connexions were concerned, this should not be over stressed. It was the Alalians, not the Massiliotes, who were principally concerned in the above battle. We have no reason to suppose that this Etrusco–Carthaginian alliance was other than ephemeral: the Etruscans took no part in the battle of Himera (480 B.C.), in which a Carthaginian fleet was destroyed by the Greeks. The foundation of a Phocaean colony at Velia was bound to further relations between that region and Massilia. The troubles of Massilia at that time lay to the West (their commercial enterprise there suffering a severe set-back from the Carthaginians),[50] not in the East. The fall of Phocaea (540 B.C.) did not necessarily sever Massilia's connexion with the east Mediterranean. Although relations with the mother-city were at an end, there were other Greek states in that region whose wares the Massiliote merchant could trade with the West. It has been suggested that the Massiliotes played a part in the exportation of Attic pottery to Italy : while the signatures of the artists and the inscriptions of the paintings on these vessels were in the Attic alphabet, the price-marks are in Ionian letters : Massilia was an Ionian colony, and the maritime enterprise of Athens only began after 480 B.C.[51] As Randall-MacIver observes, Cumae was not the sole distributing-centre of Greek wares in Italy. There were probably ‘ ports échelonned all the way up the western coast at which oriental and Greek traders made it their habit to call ’.[52] In the Campania region he sees various manifestations of Etruscan influence: ‘ a whole class of handsome black *bucchero* in Campania which has never been sufficiently studied, shows strong Etruscan influence, though it is evidently of local manufacture ’.[53] In this connexion we should note that *bucchero*-ware came to light among the finds at Fort St. Jean (Marseilles),[54] and that Italian geometric pottery of the sixth century was found at Baou-Roux.[55] Finally, although one should be wary of taking the evidence of Livy (I, 45) and Justin (XLIII, 3.4 and 5.1) too literally, the friendship between Massilia and Rome goes back to very early times. On the whole, therefore, it is not unlikely that there were over-sea trade connexions between Massilia and those parts of Italy outside the area of Greek colonization. Nor should one ignore the possibility of Etruscan and Italian objects reaching the Celtic area from the seventh to the fifth centuries by sea through Massilia, for in our present state of knowledge there is less to be said against their coming by this route than by upper Italy, the Bernardino and the Rhine.[56]

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[50] Clerc, *l.c.*, I, p. 329.

When we have proof of the existence of the La Tène A culture in south-westernmost Germany and in Switzerland, when definite evidence is forthcoming as to Upper Italy being a centre of manufacture of bronze vessels copied from Greek prototypes, and when the tangled chronology of the south Alpine cemeteries has finally been unravelled, it may be possible to regard the stimulus which contributed to the genesis of La Tène culture as also having reached the Celtic area by the Bernardino–Rhine route. But, until these three obstacles have been overcome, it is safer to regard that route as being of secondary importance, when compared with the influence which was transmitted to the Celtic world by the Greek colony of Massilia.[57]

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[51] This suggestion is advanced by Miss Adams in her Study in the Commerce of Latium (*Smith College Classical Studies*, II, p. 11).

[52] Randall-MacIver, *Iron Age in Italy*, p. 167.

[53] Ibid. *l.c.*, p. 168.

[54] CRAI, 1910, p. 430. Vasseur is inclined to assign it to the seventh and sixth centuries.

[55] Déchelette, *l.c.*, II, 3, p. 1001.

[56] The so-called Campanian vessels found on more than one site in southern France date from the fourth and third centuries. They are of Graeco-Italian origin and were made in Campania, Lucania and Apulia.

In the centuries following the Gaulish invasion of Italy, the importance of the Bernardino route seems to have reasserted itself. The reason for its lack of prominence in our period is not easy to find. Gams and Nordhagen[58] hold that the Sub-atlantic 'climate-crash', which took place *c.* 850 B.C. and reached its second rainfall maximum *c.* 500, affected trade over all the Alpine passes above 2000 metres. The height of the Bernardino is 2063 metres.

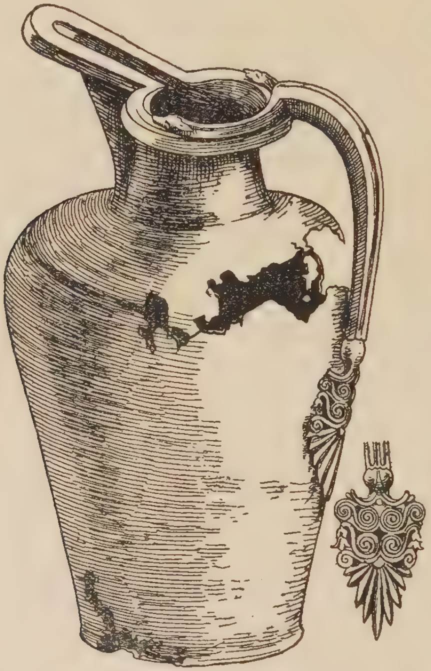

FIG. 2. LATER TYPE OF FLAGON. FROM SOMME BIONNE
By courtesy of the British Museum Authorities

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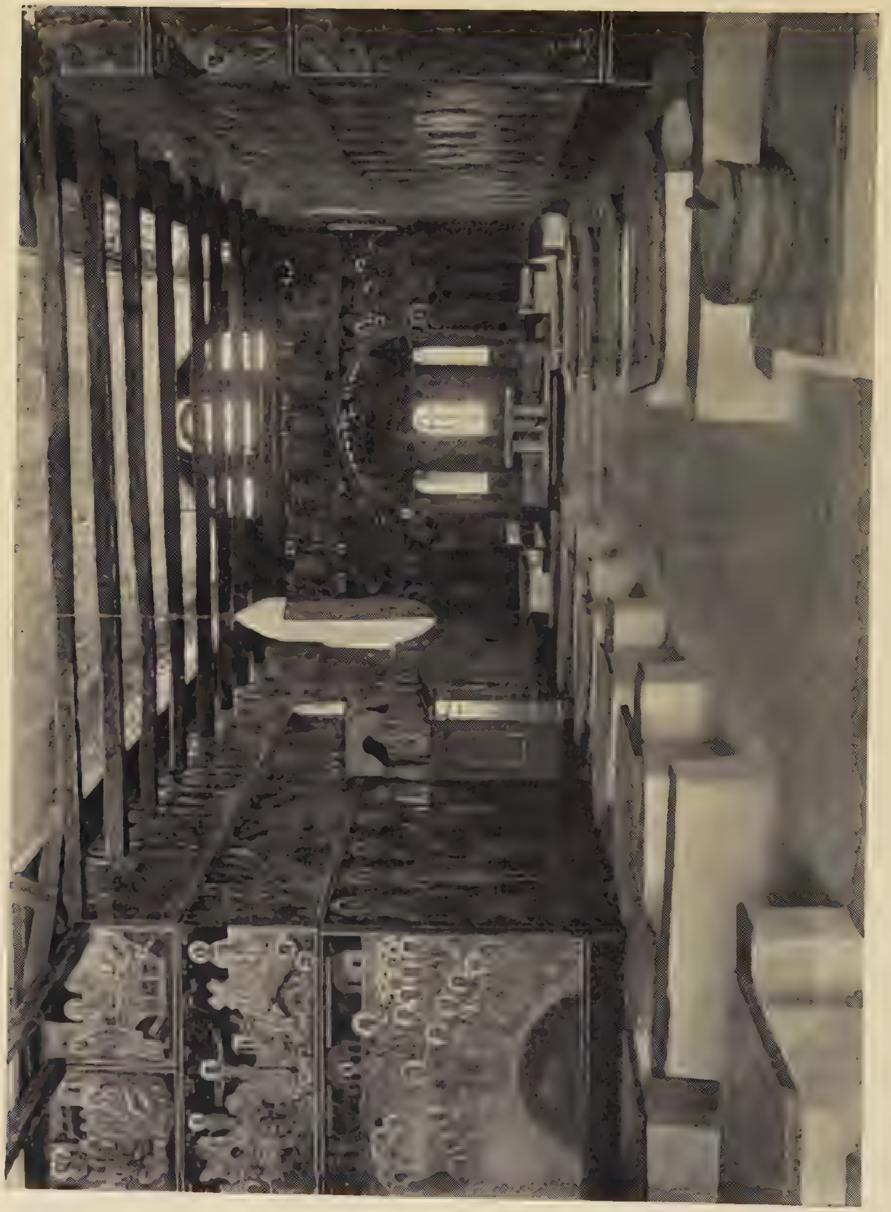
[57] In Reinecke's opinion the finely incised zoomorphic style, as seen on the girdle-plate from Cerinasca (grave 93) and the Rodenbach field-flask, may have come from north-west Italy, presumably by the Bernardino–Rhine route. This type of art played but a slight rôle in the development of the La Tène style.

[58] *Postglaziale Klimaänderungen* (*Geograph. Gesell.* Munich, XVI 2, 1923), p. 220 f.

PLATE I



THE LAVRA : TRAPEZA OR REFECTORY HALL

facing p. 443

The Monasteries of Mount Athos

by D. Talbot Rice

THE peninsula of Athos, home of monks, resort of pilgrims and the sole surviving example of the life of the Middle Ages which exists in Europe, is the only spot in these days of hooting motor cars, roaring machinery and rushing, busy people, in which it is possible to lead a completely altered life. There only in Europe can one meet an entirely original mental outlook. Even in the remotest European village everyday life is of this age and it is only by exercising the imagination that one can transfer oneself to the past. But on arrival on Athos this earth is left behind and one begins to experience the life of a pilgrim of the Middle Ages. One sees from actual experience what that life really was, and one continues to live it until the discomforts of the thirteenth century finally persuade one that the evils of this age are amply repaid by its merits and that the romance of the Middle Ages is even excelled by the adventurous spirit of today. The medieval life is something that one likes to remember as a curiosity, something to be experienced occasionally only. But the claims of its art are more lasting and in these days of ease and luxury we can appreciate them the more fully.

The discomforts, the food and the petty annoyances of everyday life are a prominent feature of the peninsula, but all this is soon forgotten, while the amazing beauty of the scenery, with its wide sweeps of wooded hills, dominated by the great bare pyramid of the Holy mountain and the charm of the monasteries, nestling round it like little birds under the wings of their mother, live as a lasting memory. In addition to this, add the inestimable treasures of the libraries and sacristries and above all the churches with their many domes, their walls painted outside with colour-wash and inside with elaborate frescoes, and the interiors filled with all the gorgeous trappings of the Eastern Church. To some the interiors seem over crowded, but a careful examination will soon lay bare the merit of several at least of the icons and disclose the beauty of the elaborately carved iconostases. These will never be forgotten by any who have had the luck to live among them for more than a very few days.

Although there is considerable variation in the different monasteries owing to the difficulty of building as often as not on the top of rocky precipices, the plan of all is basically the same. Unlike monasteries of the West, where the church usually occupies one side of a square—a tradition which is carried on today in the colleges of Oxford and Cambridge—it is on Athos placed in the centre. Around it and enclosing it completely stand the buildings of the monastery itself. On the north, south and east these consist of living rooms, usually on the first or second floors, with store-rooms, wine presses or workshops below them. On the west are more rooms, or more often the entrance gate, and at one of the western corners is a massive tower, once a stronghold or keep, but now utilized as the library. The towers have been selected for this purpose as, being of stone, they are less liable to be destroyed by fire than the flimsier but less grim dwelling rooms. These have stone foundations and are as often as not of stone above, but the walls are thin compared with those of the towers, and outside the windows run balconies of wood which serve in the case of fire as passages along which the flames rush with their full vigour, fanned by the breezes which cannot reach the floors and roofs within.

Standing free in the court, and where space permits, immediately to the west of the church, is the refectory or *trapeza* (plate I). It is usually in the shape of a T or ✠, and is large enough to hold the monks of the monastery and the hermits from cells and *sketae* or priories which are dependent on it. The floor is of stone, the roof of wood with fine great beams, and the whole effect is not unlike that of some English baronial hall of the Middle Ages. The tables are usually of rough hewn wood and the benches of the same material, but sometimes, as at the Lavra, they are of stone. Here the original D shaped tables with fixed seats like miniature walls are more than usually picturesque, but one pities even the most hardened of anchorites who had to eat at them. Today they are spared the agony, for the refectory of the Lavra is no longer in use.[1]

More interesting than the tables and benches are the walls, every square inch of which is covered by frescoes of the same type and frequently by the same hand as those that decorate the church. The subjects are usually chosen from the apocrypha and represent scenes which are not included in the church itself, where restriction is put upon the artist by the limited space and by the fact that the more important scenes of the Bible story must be included there. In the refectory he is less bound in the choice of his subject, but the painting is still subject to tradition, and the tradition of style that bound the Byzantine artist was far more severe than any that the religious painters of the West ever experienced. All Byzantine, Greek and Slav painting is based on this tradition, and in order to appreciate fully the art, which may be described in general as Byzantine, one must continually bear in mind the fact of the tradition, as well as remember that the art set out as a decorative one, that its chief purpose was to decorate religious buildings, and that it began at a time when the church was much more of a living entity than we know it in the West today. Scenes which to us seem definitely secular in character were thus in early times included in the corpus of church decoration, and though later the Fathers became much more strict, the old style of thought, which did not see so very great a difference between things religious and things secular, still survived, as it did in the Middle Ages in the West.

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[1] The monasteries of Athos are now divided into two classes, the cenobitic and the idiorrhythmic. The former are ruled over by an abbot; the latter, less strict, are governed by a committee. It is only in the monasteries of the former type that the refectory is used.

In addition to all this, Byzantine art was nurtured in a city which is even today the meeting place of East and West, namely Constantinople. There the influence of prosaic but decadent Rome strove with the purer but less energetic one of Hellenistic Greece. As these became weakened by their struggle there entered the dreamy, non-realistic, soaring mentality of the East, which was later the mark of a turning point in the nature of early Christian art. The union of the three was Byzantium, in the widest sense of the word, and the immediate outcome was the cathedral of Saint Sophia. The mosaics which adorned the cathedral were characterized by their non-representational style. Portraiture from the living model, whether human, animal or flower, was not the ideal that the artist sought. Rather he wished to decorate the building by the contrast of forms and by a contrast of lights, shadows and colours. And although we see numberless figures in the frescoes of Athos we must never forget that at heart they are purely decorative, and that it is by their power to decorate that we must judge them and not by their likeness to any living model.

The best of the frescoes, both in churches and refectories, are to be found in the higher registers, which depict scenes from the life of our Lord, or less often from the Old Testament, laid out in series like a panorama. Below are large figures of Saints standing singly, often of life-size. The style of these is less free, especially in the faces, and the tradition of the Roman tomb-paintings is more rigorously followed. The number of these saints is enormous and wherever one looks one seems to meet with a new name. They please most in a small church, where the number is limited and where the variation of treatment can be appreciated. In the larger buildings, even if the artist was a master, the folds of drapery become more than monotonous and it is only in an occasional face that one can detect the real genius of the painter.

But a discussion of the frescoes belongs more properly to the churches of which they form so essential a part and before reaching them we ought to examine the monastery which protects them in closer detail.

The main door of the refectory faces, when space permits, towards the east, and near it, separated by a small patch of open ground is the west door of the church. Standing free between it and the refectory, or sometimes slightly to the north or south, is the *phiale* or sacred well (plate II), whose water is used for blessing the church and the monastery, each room being individually consecrated once a year. Above the well is a dome, supported on eight or more pillars, the spaces between which are filled in by stone closure slabs in the lower levels. Above, the *phiale* is open to the air. Within is a marble basin which is kept empty except on ceremonial occasions. Here too the Byzantine artist, seizing on every available space, often painted frescoes on the inside of the dome, but owing to the exposed position any that were old have perished and the glaring colours of late restorations often deter a closer examination, which might lay bare excellence of design. For the restorers, although their colours are somewhat unpleasant, followed the design of the original fairly closely.

With the refectory and *phiale* close by and in the very centre of the court stands the church, the chief feature of each monastery, which forms in fact as well as in theory the core of the whole. The reason for this is not far to seek. It is a purely defensive one, following the plan of the typical *han* or hotel on an enlarged scale. On the outside grim walls, the monotony of whose upper reaches only is enlivened by windows or balconies, stretch up to the sky. Of doors there is only one, the main gate, strong and forbidding, which is closed for the night at eight o'clock and which will not be opened until the next morning. On the outside of the gate is sometimes a porch, as at the Lavra, but this is a later addition and the earliest dates from the eighteenth century. Inside the gate hang a few weapons for the use of the porter, if robbers present themselves. Then a narrow passage leads to the court. Here the picture is a very different one. All is peace and the whole atmosphere is one of ease. Up the walls run numerous stairs and on the outside of each story run open balconies, connecting curiously with one another in a manner picturesque beyond measure, but infuriating to the visitor who does not know their intricacies.

Such in general is the plan that has been adhered to since the earliest days, even when rebuilding after the various fires which have from time to time laid low entire monasteries. Robert Curzon, who visited Athos in 1837, tells a gruesome tale of the ruin he saw in one monastery which must have seemed the more severe to him as a collector of books, for it had affected the library. Any volumes that had been spared by the fire were mouldering in the wet, for the tower in which they were kept had never been reroofed.

Later architectural work which the fires have necessitated has been universally successful on Athos, and two of the most impressive monasteries which the visitor sees today, Simopetra (plate IV) and St. Paul's (plate V), date only from the end of the last century. In plan the original has been exactly followed, but in the upper structure slight alterations have been made, due to insufficient or inaccurate drawings of the older buildings. In every case where comparison is possible it can be seen that the new work is every bit as good as the old, every bit as original and every bit as imaginative. The Byzantine style and the Byzantine mentality which is responsible for it still persist today, and the peninsula, unlike the rest of the world, which adopts the worst of America rather than the best, has chosen only the material that suits the scenery and helps the individuality of its style of building.

The living rooms vary in size and comfort according to the means of the monastery to which they belong, but one feature is invariably constant, the balcony. On the northern side, where the hills descend to the sea in a gradual slope, access to the walls of the monastery is comparatively easy (plate VII). As a result the walls are blank and only high up does a verandah appear. More elaborate display of this nature is left for the interior. On the southern side, however, especially near the extremity of the peninsula, the lie of the land is very different. Here the monasteries, Simopetra, Dionysiou and Gregoriou for instance, stand on the tops of prominent crags, surrounded only by rocky peaks. Access is only possible on one side, where the crag on which the monastery perches is connected with the slopes of the Holy mountain behind. With no danger of marauders on the seaward side, the balconies can jut out freely. Each story has one, which acts as a connecting passage between the rooms on the outside. Tier upon tier they rise, each acting as a roof to the one below it, up to the highest floor, where the roof of the building itself is prolonged over the balcony. Nothing is more picturesque when seen from a distance and nothing can be more perilous, one thinks, as one walks along them accompanied by the rattle of loose planks, and as one gazes down some hundreds of feet to the sea below.

Mr Bryon, in his book, *The Station**, makes an interesting comparison between Simopetra, perhaps the most picturesque and most original of all the Athos monasteries, and the Potala palace at Lhassa, which is built in a style almost identical. Were similar surroundings and the rigours of a monastic life responsible for both? The similarity is striking, but no less striking is a comparison of the type of building found on the northern side of Athos with that of some of the most modern architectural feats of London. In both the walls stand up as austere masses of stonework, penetrated it would seem only here and there by windows of minute size. In both cases the appearance is deceptive, for the windows are in reality not so very small and the rooms which they serve are light and airy.

The interior decoration of the rooms does not concern us here. Any who desire to see them pictured must turn to Mr Byron's book. Let us instead walk down one of the numerous stairways that give on to the court and find our way to the church.

Outside it is easily distinguished by its domed roof and by the apsidal terminations of the eastern end. In plan the Greek cross is followed, but when additions have been made it is not always too easy to distinguish it. At the point of intersection is the principal dome, with mosaic or fresco of Christ the Pantocrator within. Immediately to the east of this stretches the choir, with apsidal end at the east. On either side of it is an apsed aisle or chapel, used principally by the priests during the service. These are entered from the west by a door opening directly into the transepts, or from the sides by a door opening into the choir. To the north and south of the dome stretch the transepts, ending again in apses facing north and south. Between the choir and the transepts stands the iconostasis on which are hung some of the icons which, ever since the days of the iconoclast emperors, have constituted so essential a part of the Greek rite. So numerous are they indeed that the iconostasis has become far too small to hold them

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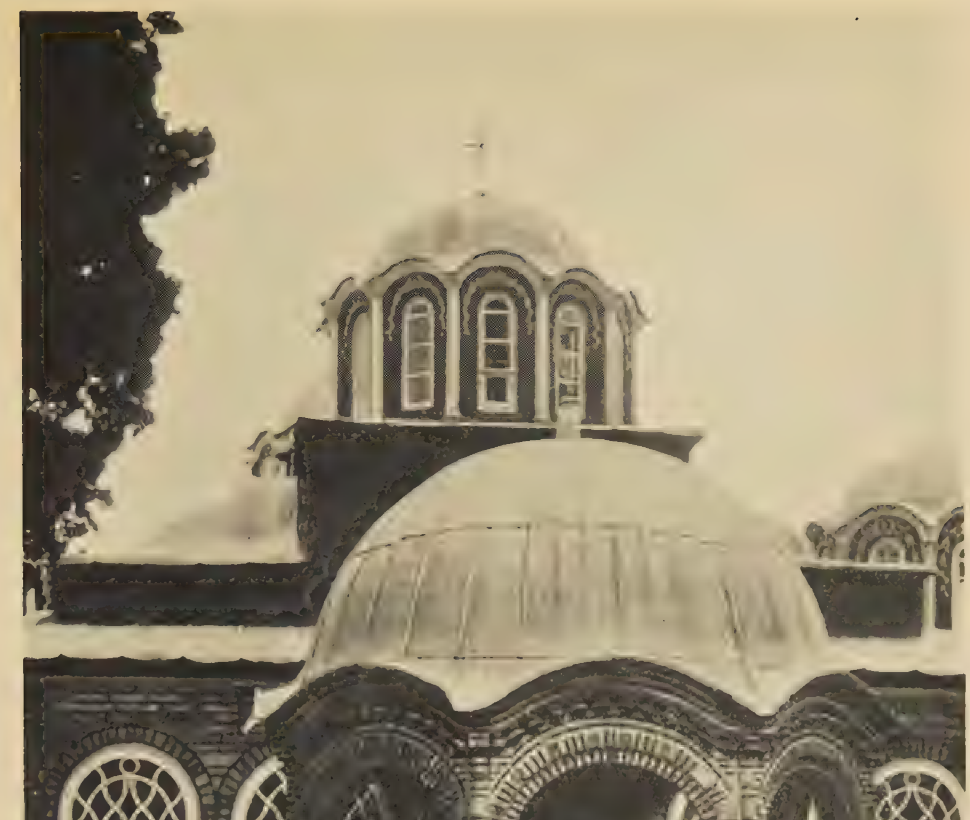
* Robert Byron, *The Station: Athos, treasures and men*. Duckworth, 1928.

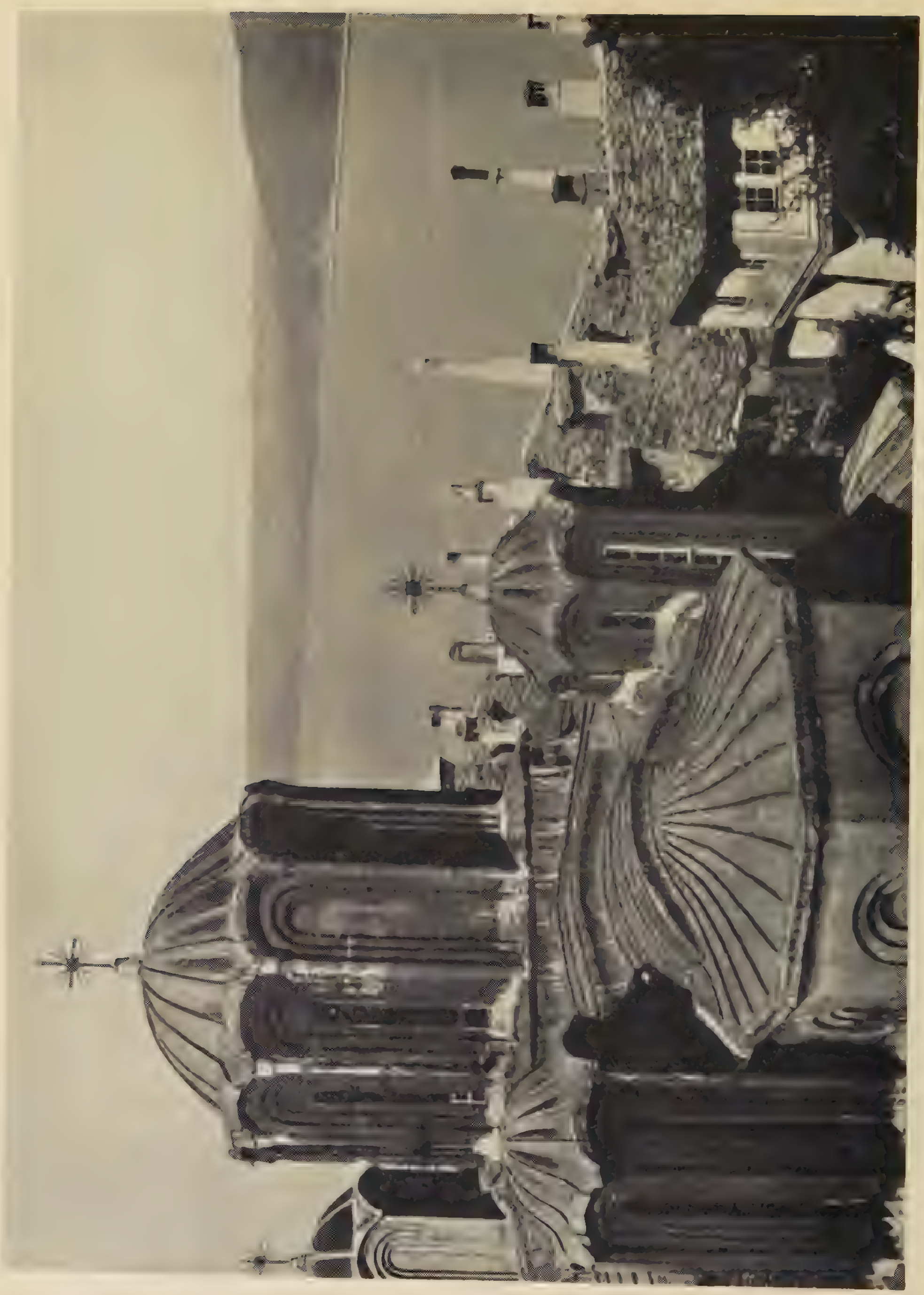
PLATE II



THE LAVRA: PHIALE AND WESTERN END OF CATHOLICON

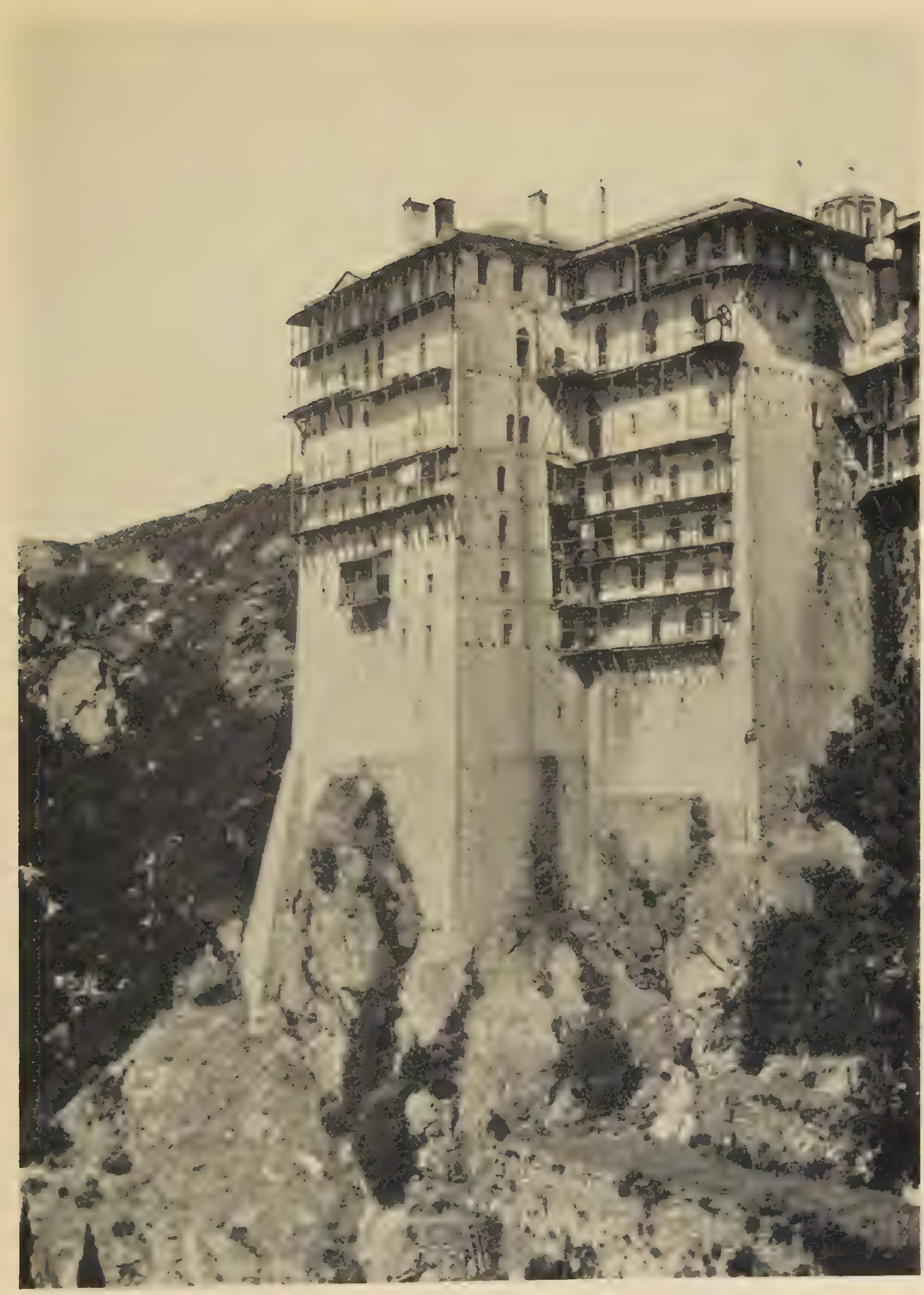
facing p. 448

PLATE III

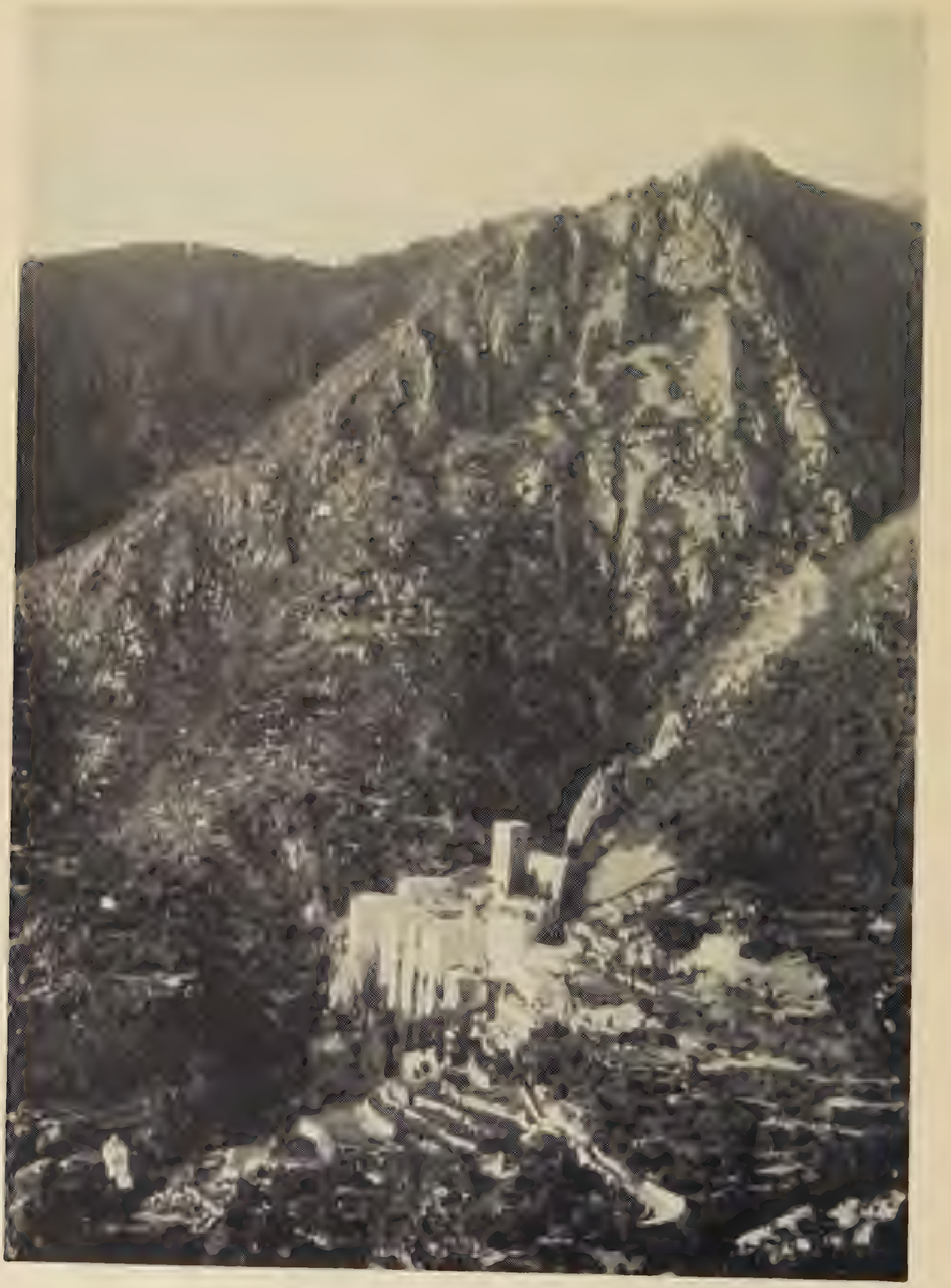


THE DOMES OF DOCHERIOU

PLATE IV

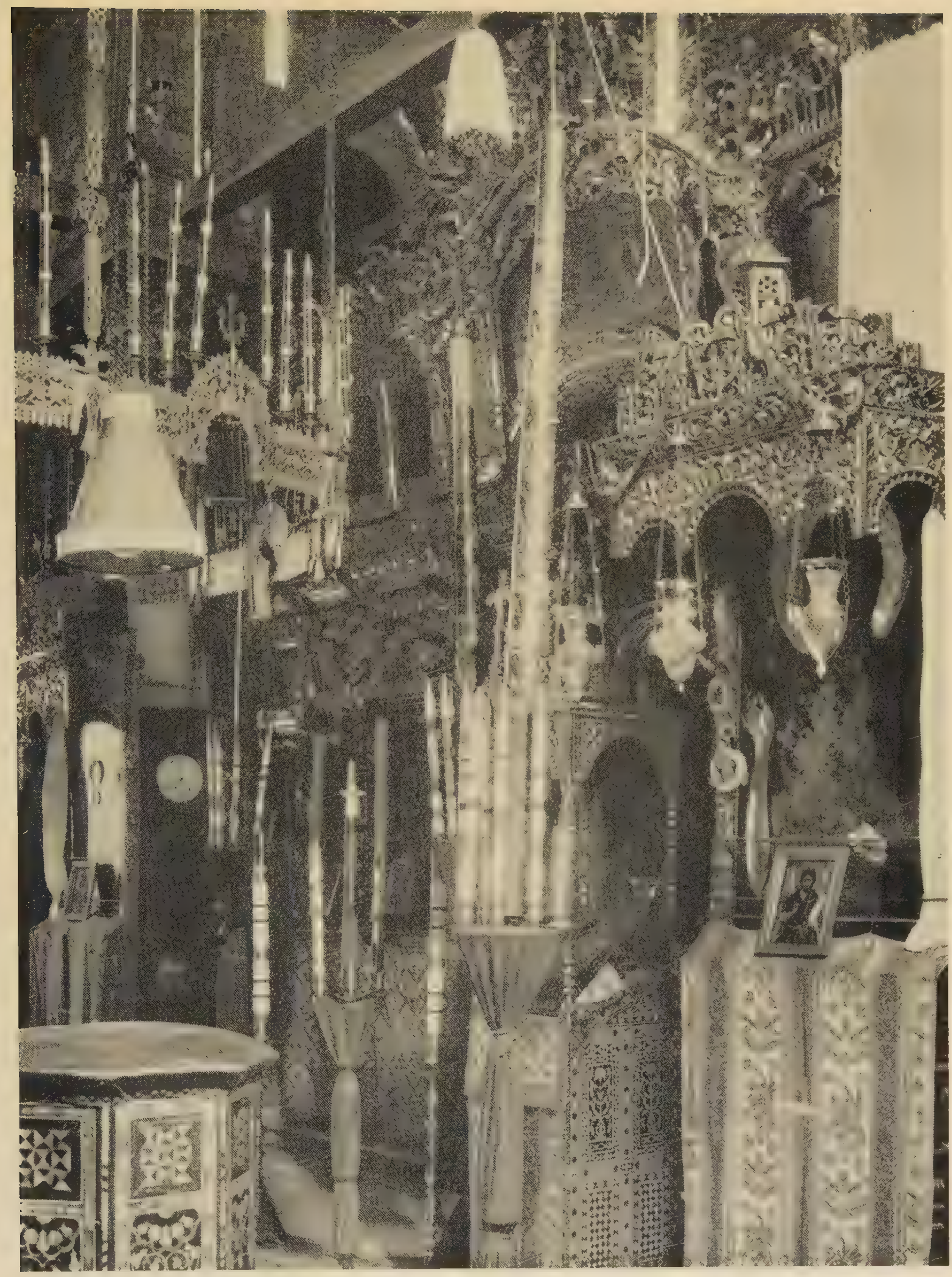


THE MONASTERY OF SIMOPETRA



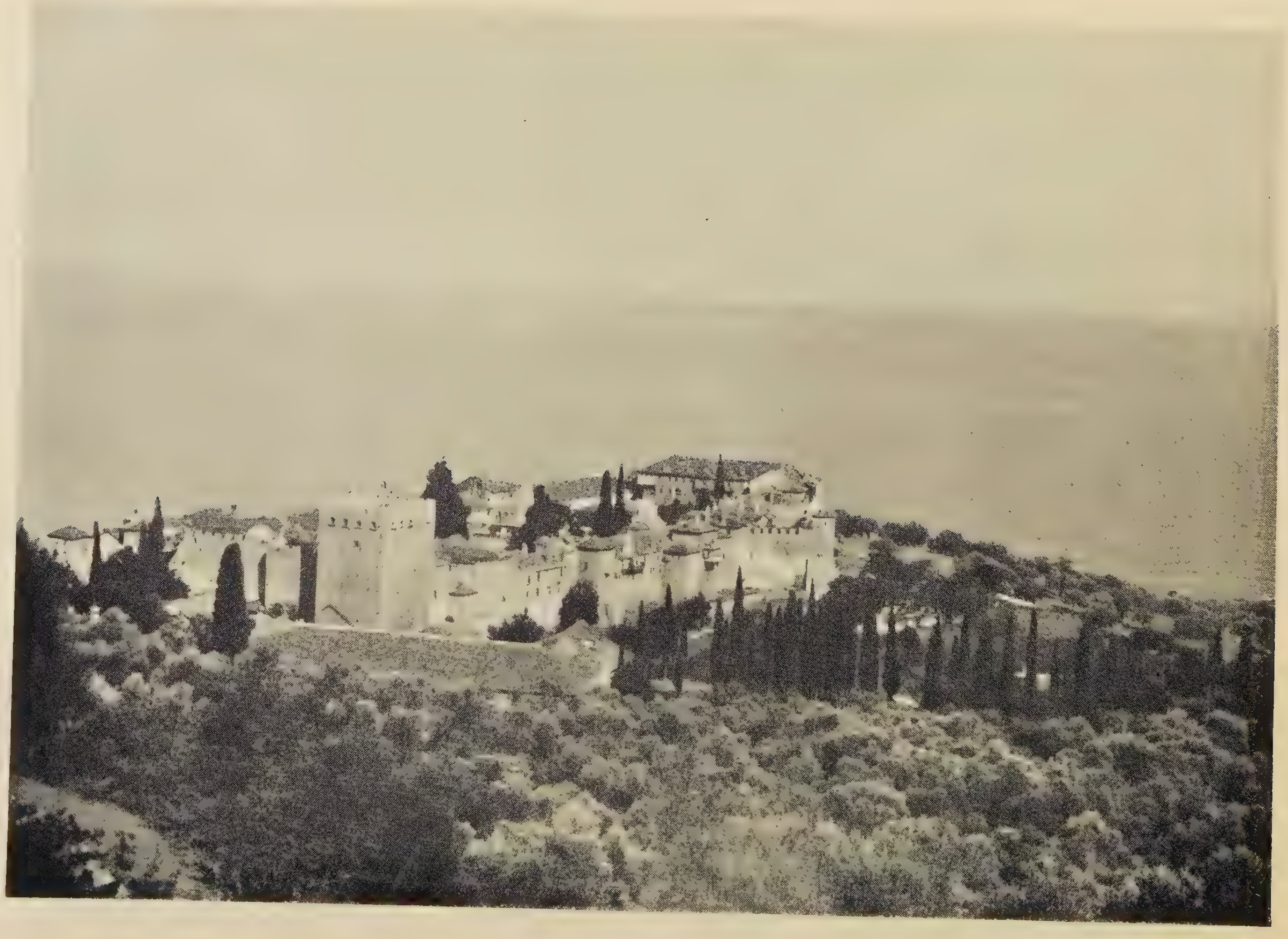
THE MONASTERY OF ST PAUL

PLATE VI



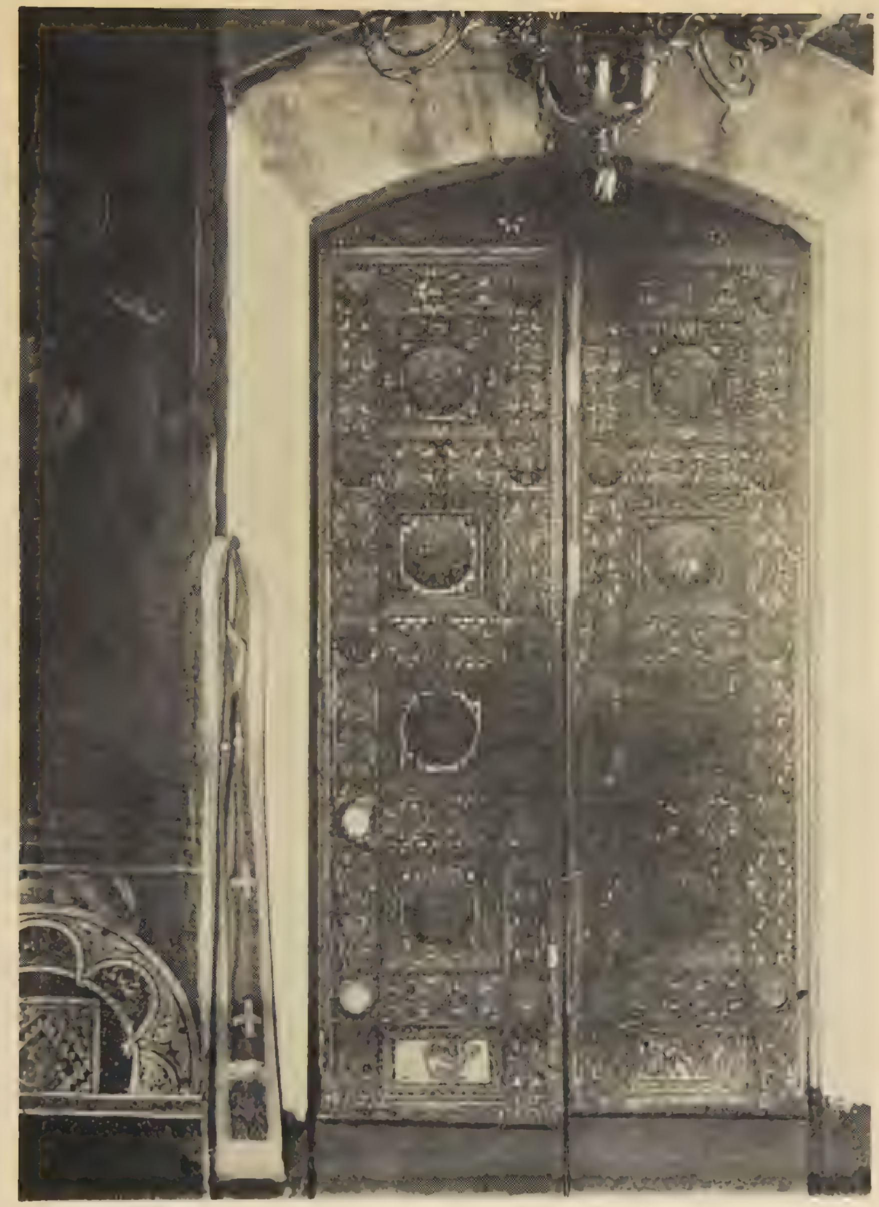
INTERIOR OF THE CHURCH OF DIONYSIOU SHOWING CANDLES, ICONS, AND CARVED ICONOSTASIS

PLATE VII



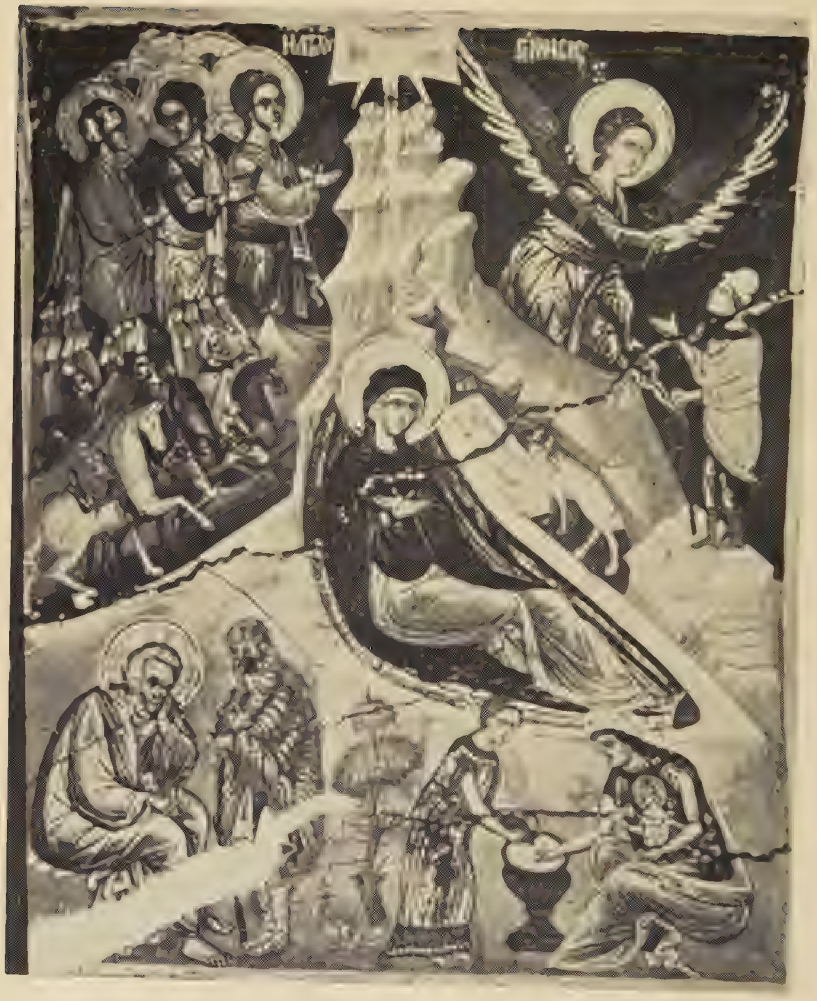
THE LAVRA FROM HOLY MOUNTAIN

PLATE VIII



CENTRAL DOORS OF DIONYSIOU CHURCH

PLATE IX



TYPICAL REPRESENTATION OF FRESCOES: GENESIS and they are stuck up wherever space permits, hiding the lower parts of the frescoes on the walls like small pictures before big ones in some dusty antique shop.

The iconostasis is now usually of wood, finely carved, but in some of the churches remains of the stone ones which preceded them are still be to found, buried under the wood of later work. In the centre of it is a gate with wooden door standing to the height of about three feet. Above it the opening is closed by a curtain which is raised at certain moments during the service so that the congregation may have a view of the altar within. (Plate VI).

To the west stretches the nave or narthex, which varies in length in different churches according to their richness, and to the west again is the exo-narthex with a small dome at each end of it. It runs from north to south and forms a kind of portico, into which opens the west door of the church itself, and, if the foundation be a rich one, those of the lateral chapels on either side of the nave. (Plate VIII).

The oldest church on Athos, the Protaton at Karyes, which acts as a sort of cathedral in the tiny capital, is of a somewhat different plan, but the churches of the monasteries are surprisingly similar when one considers that the dates of building vary over some four centuries. The church of the Lavra, belonging to the eleventh century, is a striking example of the most sumptuous type, where lateral chapels are present both beside the choir and beside the nave. In style the church of Iveron, belonging to the preceding century, is very similar. By the sixteenth century only very slight changes have come in. The plan is the same, but above the builder has become more ambitious. The walls are higher and the windows large, so that the interior is much lighter and the domes have developed into a kind of turret with windows all around it. The actual roof surface of the domes is thus lessened and the picture of the Pantocrator, which had been such a dominating feature in the older churches, is diminished in size, is pushed upwards, and is more brightly lit. As a result it becomes less mysterious and has, in the later frescoes, lost a great deal of its importance.

But not so the other pictures. If the twelfth century had been the age in which the art of decoration in mosaic reached its height, the thirteenth and fourteenth were those in which fresco painting began to come into its own, not only on Athos but over the whole Byzantine world. The richest days of the Empire were over and her great cities were falling one after the other before the onmarch of the Turk. With this decline of temporal power spread a wide reaching wave of popular religious feeling. In this age the churches may be poorer and less sumptuous as regards their contents, but they become far more numerous and far more the possessions of the people. Before they were rich and well cared for, supported by and decorated at the command of an emperor or powerful noble. Now they are supported by local subscription and the congregation has a say in their maintenance. As well as benefiting from the pleasures and mysteries of the services it has to undertake a share of the costs and to experience the responsibilities of upkeep. As a result the churches become far more expressive of the mentality of the age in general and if the decoration or the building itself has lost by the limitation of expense, it has gained in that it is the expression of a sincere religious feeling. The paintings of the age show this sincerity. They are religious in matter, they are artistic and decorative in effect, and at the same time they give an idea of the life of the day and express now and again the curious workings of minds thoroughly Byzantine, more so than those of the cultured court circles could ever have been.

None of the existing frescoes on Athos are very early in date—all are posterior to the conquest of Constantinople in 1453 by some hundred years. They belong distinctly to two schools, the Macedonian, as exemplified by the works of the painter Panselinos at the Protaton, and the Cretan, as seen at the Lavra. The two styles are as different as Flemish and Italian religious paintings of the 'primitive' style, and among art loving Greeks there is as much partizanship for one or the other school. The chief difference lies in the treatment of the individual, especially as regards the effects of light and shade. The chief character of the Cretan school is the unusual use of high light. The robe or garment is painted in colour and the folds are emphasized by lining in the light part in white. Dark shading is much more sparely used and much less often resorted to.

Much has been said about the figures and the chief subjects of this later Byzantine painting, but little about the backgrounds of the pictures, which throw the clearest light on the life of the day and which are the most obvious expression of the thoughts of the painter. (Plate IX). Here the formal nature of the art is seen at its full. Stars are geometric patterns, the relation of whose lines to one another is of the greatest importance in the composition of the pictures. Halos act as frames to faces or are developed as backgrounds to entire bodies, with curious patterns in line and colour, akin in ideal to the formal designs of a Picasso. Trees are geometric patterns, heavy bodies used to the greatest effect for purposes of balance. But most interesting are the houses, with two or three floors, pointed roofs and overhanging eaves. Perspective is lacking, but their decorative power is thus enhanced all the more and one sees them not only as houses that could be lived in, but as pieces of a scene, before which stand the actors of a particular piece. On looking at one of the frescoes at Xenophontos one forgets the religious scene in the foreground in the imagination that it is a creation of the Russian ballet and that in one of those houses lived the miller of the 'Three Cornered Hat'. In another in the same monastery the fact that the house is a house at all has been entirely forgotten. It has been neatly bound round with a wide ribbon, tied in a bow, like a chocolate box. In yet another, the scene of our Lord's miracle where the bed was lowered through the roof is portrayed. One sees the house and one sees the hole in the roof, with the sick man's relations standing by it, holding in their hands the ropes to which the bed is attached. But it has been let down, not through the hole, but on the outside of the house.

Such was the Byzantine mind which produced the frescoes, exuberant with imagination, which produced the buildings, more *aery* than Neuchwanstein yet as solid as Adelaide House, and which has preserved through so many years a life long since forgotten elsewhere. Had the Turks not left their own continent, had they not invaded that inhabited by a people of such a very different nature, what would have been the result? One wonders what the Byzantine mind would have produced in eastern Europe.

The Copper Mountain of Magan*

by HAROLD PEAKE

ONE of the most interesting problems of antiquity is the origin of metallurgy. The metals first used seem to have been gold and copper, and it has been felt that if we could ascertain where the earliest civilized people obtained their ores we should be on the way to finding out which group first made the momentous discovery that copper could be melted and cast in a mould.

With a view to solving some part of this problem, the Anthropological Section of the British Association, at the Toronto meeting in 1924, appointed a Research Committee to report on the probable sources of the supply of copper used by the Sumerians. The present writer was appointed chairman of this committee, and this is his only excuse for making public the results of the labours of others, and the secretary from the beginning has been Mr G. A. Garfitt, to whose untiring energy is due the work that has been accomplished. Several leading archaeologists, with experience in excavations in the Near East, were added to the committee, as well as Dr Cecil Desch, F.R.S., Professor of Metallurgy at the University of Sheffield, and, at a later date, Professor C. O. Bannister of the University of Liverpool. The examination and analysis of the specimens have been carried out by these professors and their assistants.

Mr Garfitt's first task was to obtain specimens of copper objects, of as early a date as possible, from various sites in Mesopotamia. These were willingly supplied by Dr H. R. Hall, of the British Museum, Mr C. L. Woolley, Mr E. Thurlow Leeds, Dr Stephen Langdon, Sir Flinders Petrie and the Field Museum of Chicago. Dr Thureau-Dangin also very kindly supplied a sample from a copper axe-head (no. 10759), found in the lowest layer at Susa, from the collections at the Louvre.

Our energetic secretary then began to collect as many specimens as he was able of copper ores from Asia Minor, Persia, Cyprus, Egypt and Arabia. In this he received much assistance from Major Blomfield of the Department of Overseas Trade, from Colonel Woods, the British Commercial Secretary at Constantinople, Mr R. H. Hadow, the British Secretary in charge of commercial affairs at Tehran, and a number of the consular officers in the Turkish and Persian Empires, some of whom made searches in most inaccessible places and under very trying climatic conditions. He also received valuable assistance from Sir Arnold Wilson, of the Anglo-Persian Oil Company, and from several others engaged in commercial undertakings in the Near East. All samples from early objects and ores were sent to Professor Desch for analysis and some to Professor Bannister, who undertook a microscopic examination of the metals.

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* Read before the Seventeenth International Congress of Orientalists at Oxford, 29 August 1928.

Analysis showed that the axe-head from Susa, unlike the other specimens submitted, was of remarkably pure copper; there was a faint trace of nickel, but all other impurities were absent. At first it was thought that perhaps the ore used had been native copper, and search was made for ores of this type. Two samples only were obtained, one from near Angora and the other from Arghana, which lies between the Euphrates and the head of the most westerly tributary of the Tigris. An analysis of these gave the following results:—

	Copper	Tin	Iron	Nickel	Sulphur
Angora ..	99·83	tr.	0·17	—	—
Arghana ..	97·08	0·27	2·13	0·03	0·49

The Arghana deposits lie near enough to Mesopotamia to have been a possible source for the Susa axe-head, but the ore is not of sufficient purity. The Angora mine, the ore from which contains very little impurity, seems to lie at too great a distance to have been utilized by the people of Susa. Professor Desch is of opinion that 'it is very likely that the pure metal has been obtained by smelting malachite, a mineral of such characteristic appearance that it would be easily recognized by the early metallurgists, and often of high purity'.

On the other hand the copper objects from the Sumerian settlements, and in fact all other samples from Mesopotamia dating from before 2000 B.C., contained small quantities and sometimes a considerable proportion of nickel.

The following are some of the samples examined:—

Three specimens from the earliest graves at Ur, dating from before the first dynasty of that city: cited as U.A., U.B. and U.C.

Six specimens from the 1928 excavations at Kish: cited as K.

One specimen from mound A at Kish: cited as K.A.

Bronze specimen from mound W at Kish, of the time of Nebuchadnezzar: cited as K.W.

Lion frieze at Tell–el–Obeid: cited as O.L.

Nail from Tell–el–Obeid: cited as O.N.

Nail from Irak, sent by Miss Bell, dating from about 2000 B.C.: cited as I.N.

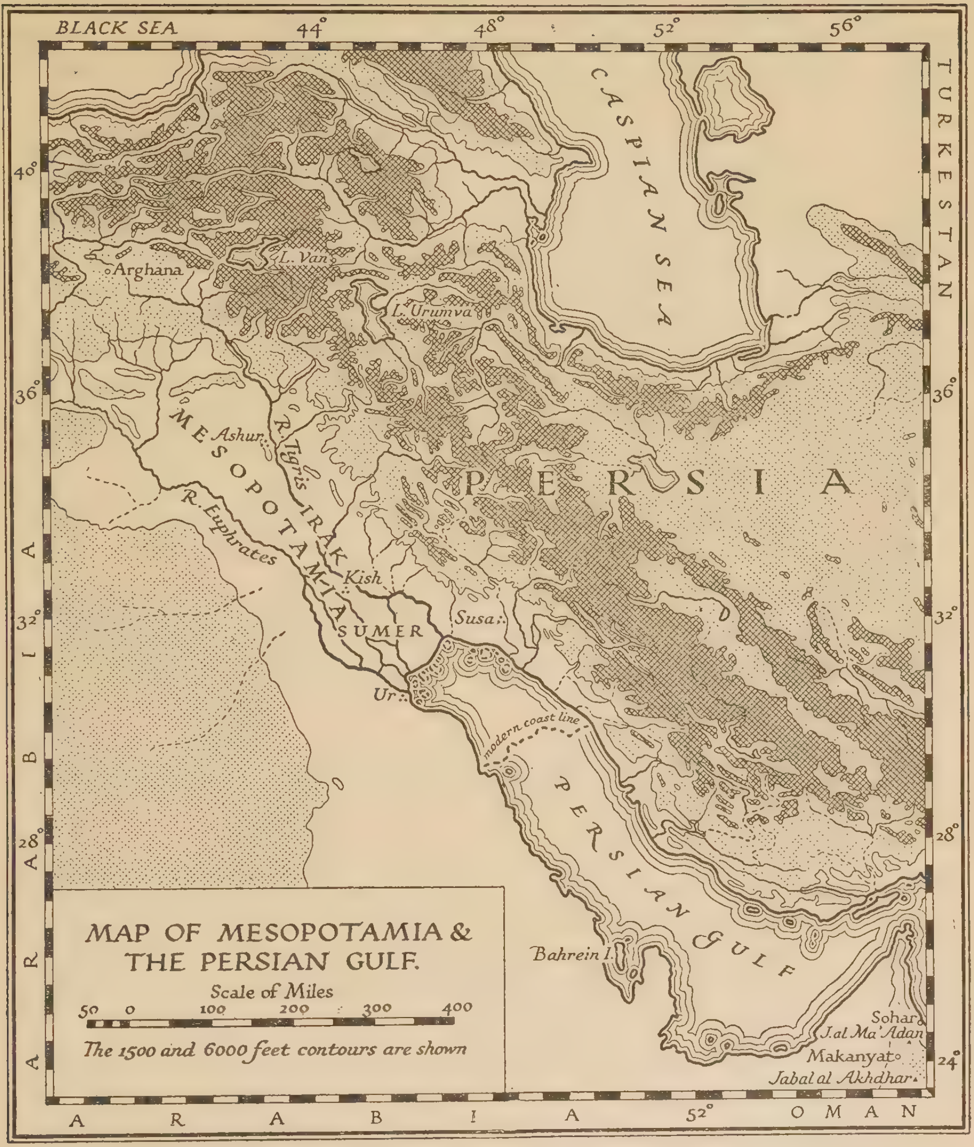
Five specimens of bronze from tombs in the Islands of Bahrein, dating from about 1200 B.C.: cited as B.

A copper nail, attached to a Sumerian statuette of elaeolite, in the Ny–Carlsberg Glyptothek at Copenhagen, and attributed to about 3000 B.C., was analyzed by Professor John Sabelian; the result, which was published in *Ancient Egypt*, 1924, p. 12, is given at the bottom of the table, where it is cited as S.

The analyses were:—

	Copper	Tin	Lead	Nickel	Iron	Sulphur	Gold	Arsenic
U.A.	84·18	12·00	1·62	2·20	—	—	—	—
U.B.	85·13	11·78	1·13	0·25	1·74	—	—	—
U.C.	85·01	14·52	0·47	tr.	—	—	—	—
K.156693	57·12	8·21	—	0·05	—	—		—
K.156835	67·46	8·60	—	0·05	—	—	—	—
K.156688	68·40	10·70	—	0·17	—	—	—	—
K.156796	80·30	2·52	—	0·09	—	—	—	—
K.156700	64·42	5·33	—	0·02	—	—	—	—
K. no numb.	78·12	5·17	—	0·005	—	—	—	—
K.A.	94·01	0·43	0·58	3·34	1·31	0·17	tr.	—
K.W.	88·16	4·65	0·15	tr.	6·16	0·42	—	—
O.L.	98·81	tr.	—	0·12	0·98	0·09	—	—
O.N.	99·21	0·16	—	0·23	0·25	0·12	—	0·02
I.N.	88·60	9·77	0·68	—	0·28	0·17	—	tr.
B.5.	89·07	9·60	0·27	—	0·53	0·53	—	—
B.6.	87·76	11·70	—	—	0·54	—	—	tr.
B.3.	94·69	3·18	0·47	0·27	0·44	0·95	—	—
B.7.	77·53	19·27	1·40	0·52	0·94	0·34	—	—
B.8.	82·16	16·57	tr.	—	0·75	0·52	—	—
S.	95·07	—	—	0·28	0·86	—	—	—

It will be seen from these analyses that a high percentage of nickel was found in an object from one of the early graves at Ur, and from mound A at Kish, while a small, though appreciable, quantity was found in all the remaining specimens, except that from mound W at Kish, of the time of Nebuchadnezzar, the nail from Irak, dated at about



MAP OF MESOPOTAMIA & THE PERSIAN GULF.

Scale of Miles

The 1500 and 6000 feet contours are shown

2000 B.C., and three of the five specimens from Bahrein Island, which are believed to date from about 1200 B.C. From this it is clear that the people of Susa I used an ore singularly free from impurities, while the Sumerians were utilizing one with a definite, even if small, percentage of nickel.

The efforts of Mr Garfitt have been rewarded by receiving a large number of samples of copper ore from Anatolia, Persia, Cyprus and the Sinaitic peninsula, and though all of these were analyzed with great care, not a trace of nickel could be found in any of them. At last, quite recently, Sir Arnold Wilson reported that Mr G. M. Lees, prospecting for the Anglo-Persian Oil Company, had found in Oman some old copper workings at a place known as Jabal al Ma'adan, in Wadi Ahin, inland from Sohar, and had brought back samples of the ore and the slag. The slag contained only a small quantity of copper but no nickel, but the ore, which was only in the form of thin veins, much mixed with other minerals, contained 1.50% of copper and 0.19% of nickel. This, then, seems possibly to have been the site whence the Sumerians, from the time that they first settled at Kish and Ur until their conquest by the Amurru, obtained their supplies of copper.

It has long been known that the early peoples of Mesopotamia obtained copper from Magan or Maganna, which is described in a geographical tablet of Sargon of Agade (2752–2697 B.C.) found at Ashur. The sentence runs thus :—

> Dilmun (and) Maganna, countries beyond the Lower Sea and the countries from the rising to the setting of the sun which Sargon the . . . king conquered with his hand.[1]

A fuller account of this place occurs during the reign of Naram–Sin (2673–2635 B.C.), usually thought to have been his son, though not his immediate successor, for he is said to have conquered, or re-conquered, Magan. It is said that he went to Magan and captured Mannu–dannu, its king. Naram–Sin had a statue of himself made of diorite, which he brought from the mountains of Magan.[2]

In the time of Gudea, about 2500 B.C., timber was brought from Magan, Melukhkha, Gubin and Dilmun, and diorite from Magan, while in the Sumerian legend of Dilmun, the deity of Magan is called Nindulla, 'queen of the flocks'.[3] The ships and copper of Dilmun, Magan and Melukhkha are mentioned together in the lists. In the time of Hammurabi, 2067–2024 B.C., different kinds of dates were brought from Dilmun, Magan and Melukhkha.[4]

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[1] A. H. Sayce, 'The Atlas of the Empire of Sargon of Akkad'. *Ancient Egypt*, 1924, p. 2. The text has been published in *Keilschrifttexte aus Assur, verschiedenen Inhalts* (1920), no. 92.

[2] *Cambridge Ancient History*, I, 415.

Langdon states that Magan was called the mountain of copper, and suggests that this refers to Jebel Akhdar in Oman, where copper is still found.[5]

Now Jabal al Ma'adan,[6] as far as one can judge, lies only 75 miles, or perhaps even less, north-west of Jebel Akhdar, and almost equidistant between the two is the town or village of Makanyat, the first two syllables of which seem to retain the name of Magan. Whether this be so or not, it seems almost certain that from the earliest times down to the days of the First Babylonian Dynasty the Sumerians obtained their copper, either from Jabal al Ma'adan or Jebel Akhdar, or from some place not far from either and so not far from Makanyat,[7] and that this district was known to them as Magan.

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[3] *Cambridge Ancient History*, I, 416.

[4] Ibid. 544.

[5] Ibid. 416. From an inscription of Gudea.

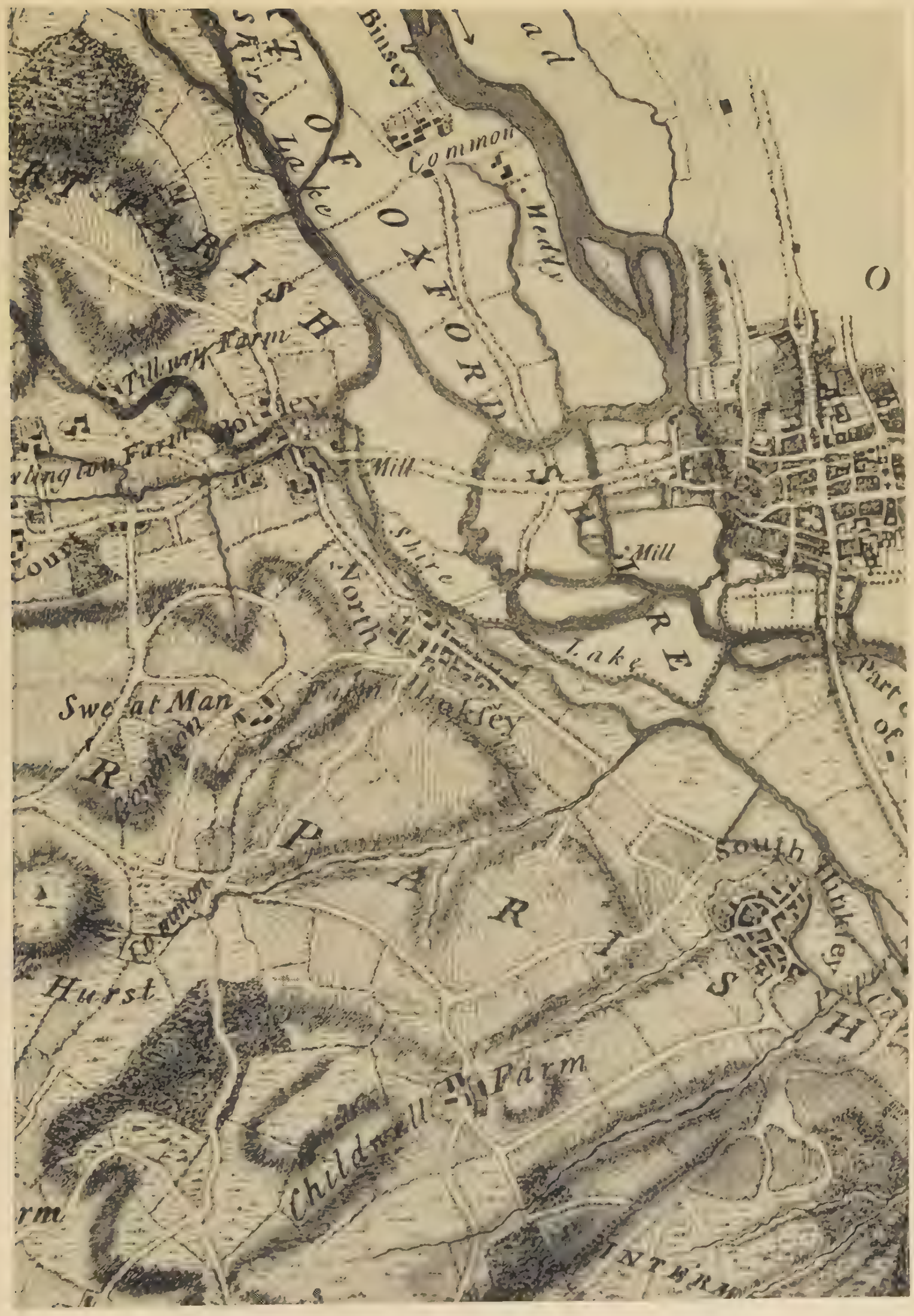
[6] Professor Albright informs me that this means 'the mountain of the mines'.

[7] Professor Langdon tells me that this means 'the camping-ground'.

The Ford of Oxford

by Rev. H. Salter

IT has often been discussed where the ford was which gave its name to Oxford. As far as is known, it is mentioned in two documents only which are of the Middle Ages, and the second of them is so obscure that it would not be intelligible by itself. The first is a charter, which will soon be printed in the Oseney cartulary, dated 27 June 1352, by which Roger Brekebeke grants to John de Sancta Frideswida a messuage in St. Aldate's, a plot of land in St. Michael's parish, an acre of meadow and a ham: the two last are described in these words ' acra vero prati iacet retro pandoxinam abbathie de Oseney inter pratum domini Ricardi Dammory quod tenet de domino rege ad feodifirmam ex parte australi et pratum quod quondam fuit Ricardi le Spicer ex parte boriali; dicta vero hamma iacet in eodem suburbio inter pratum priorisse et conventus de Stodleghe ex parte boriali et vadum vocatum Oxenforde iuxta pontem ducentem versus Northhengseye ex parte australi '. (The acre of meadow lies behind the brewery of Oseney Abbey, being bounded on the south by the meadow of the lord, Richard Dammory, which he holds in fee-farm of the king, and on the north by the meadow formerly belonging to Richard le Spicer; the said ham lies in the same suburb, being bounded on the north by the meadow of the prioress and convent of Studley, and on the south by the ford called ' Oxenforde ' near the bridge leading towards North Hinksey). The brewery of Oseney was on an island which lay to the west of the abbey and was separated from it by what is now the main stream of the Thames. Behind the brewery, *i.e.* to the west of it, there was a meadow, then known as Bulstake Mead, now Oseney Mead, bounded on the north by what is now the high road, and on the south by the island known as King's Mead, which at that time was held by Richard Dammory together with Northgate Hundred and the manor of Headington. The ham was further to the west and must have been adjacent to the causeway which leads to Hinksey ferry. There is to this day a footbridge over that branch of the river which is called Bulstake, and we gather that the ford was by the side of this bridge just above it; the pedestrians used the bridge, and horses and cattle used the ford. The county boundary



THE APPROACHES TO OXFORD, FROM ROCQUE'S MAP OF BERKSHIRE, 1761

facing p. 458

passed under the bridge, along the bed of Bulstake, but about a hundred yards above the bridge it branched off westward along a watercourse called Shirelake, which came down from the sluice just above Botley Mill.

The other deed has been printed in *Mediaeval Archives of the University of Oxford*, vol. 1, p. 193. In 1376 there was a dispute about the boundary between Oseney and the city ; the latter asserted that the whole of Oseney was within the bounds of the city and that in all payments it ought to contribute with the city. There is no doubt that for certain purposes the boundary of Oxford followed the county boundary as far as Godstow, and when Queen Elizabeth visited Oxford, coming from Wytham, she was met by the mayor at Godstow Bridge ; but for other purposes the authority of the city ended at the north gate, and it was referred to the bishop of Lincoln how far the authority of the city extended on the west. The city put their *libellus* before the bishop, stating the grounds of their claim ; this is lost, but what we have is the reply of the abbot of Oseney, and it is not always easy to discern what he was answering. Towards the end of the document the abbot deals with the mayor's statement that the tannery of Oseney was talliaged with the burgesses of the city; the tannery was adjacent to the brewery, and as it lay to the west of Oseney, this would be an argument that the boundary of the city was to the west of Oseney ; the abbot's answer is that talliage was claimed but that the claim of the city was disallowed in the king's court. He proceeds : ' As for the statement of the mayor and commonalty that there is a spot called Oxford, from which spot the town takes its name, (and that) it is parcel of the said city, the abbot replies that it is within the franchise and lordship of Northgate Hundred and not (in the lordship) of the city of Oxford, nor of their franchise '. He then deals with the statement that many burgesses owned land in the meadows which lay to the west of Oseney. His reply need not be quoted, but it may be observed that he speaks of ' the spot called Oxford ' after dealing with the tannery of Oseney, and before coming to the meadows. This is where the ford called Oxford would naturally be noticed.

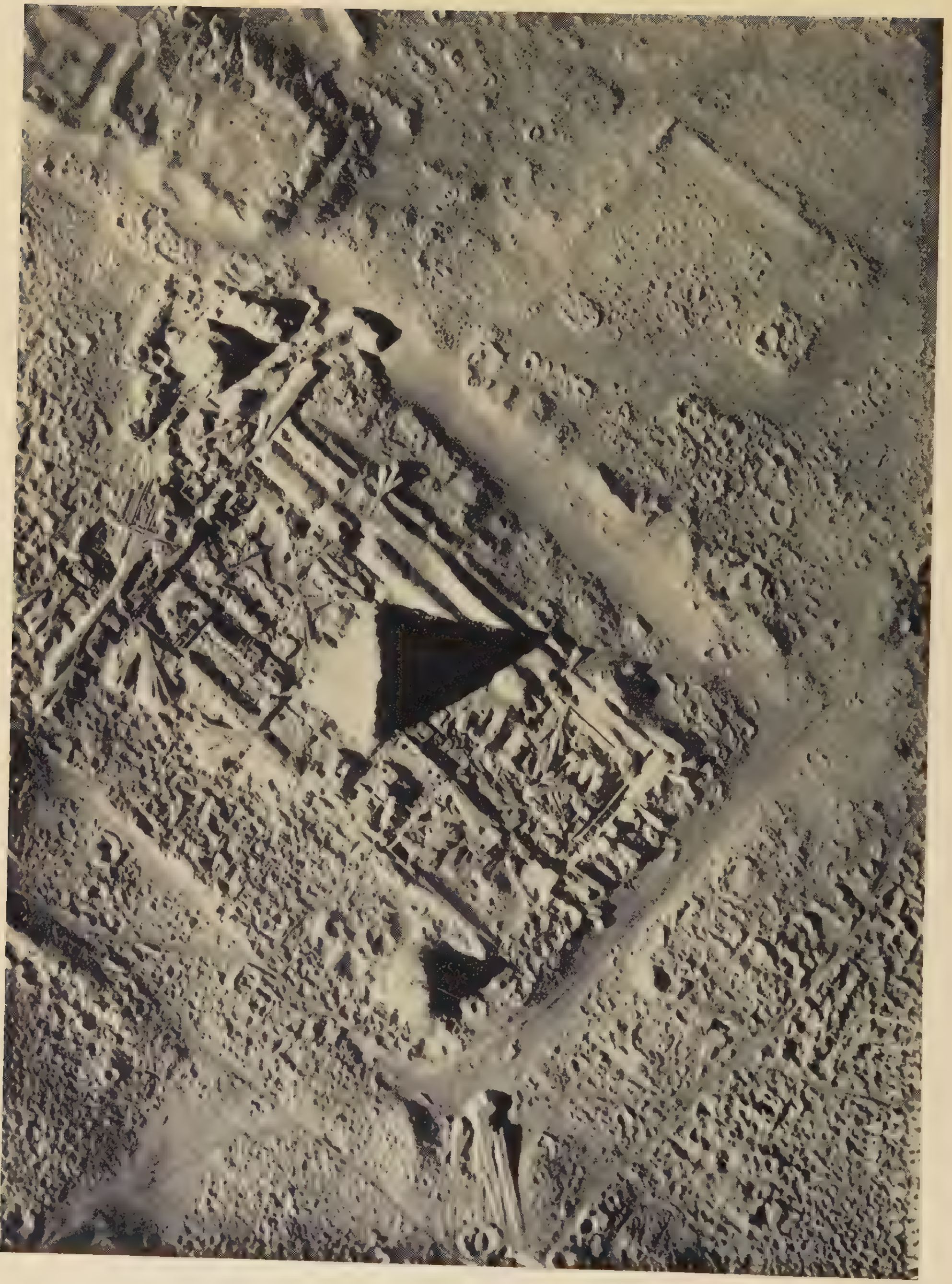
This situation of the original ford is not what we should have expected in some ways. But it must be remembered that there was no approach to Oxford by the Botley road in the Middle Ages. Dr Claymund, about 1540, was the first to build bridges along the Botley road, and they were only the width of one vehicle. When the two coach roads to Faringdon and to Witney were made between 1760 and 1770, new bridges had to be built wide enough for two vehicles.

Rocque's map of Berkshire, made in 1761, shows that there were a few lanes at Botley, but no main roads, and those who wished to reach Oxford from Cumnor would naturally go by Hinksey ferry. The map shows that the way to Oxford from Faringdon and the west was by Boar's Hill and through Grandpont to the south gate ; but as Grandpont was made by Robert d'Oilli, the approach to Oxford in Saxon times must have been by the old track which runs up the hill from Hinksey and then divides, one branch leading by Chawley, Cumnor, Bablock Hithe, Stanton Harcourt to Witney, the other by Wootton, Bessilsleigh, Appleton, Fyfield, Longworth, Hinton to Faringdon. When on St. Scholastica's day in 1355 a crowd of villagers burst in at the *west* gate of Oxford with a black flag, crying 'slay, slay', they must have come through Hinksey and over the footbridge at the ford called Oxford.

It may seem that the Britons or Saxons might have chosen a better spot. Four branches of the river have to be crossed by this way :—first the stream where is, and always was, a ferry ; then the ford called Oxford ; next the ford called Wereford where Oseney built a bridge soon after 1200, and lastly the ford below the Castle mill. But it is not the number of fords nor their length which is to be considered, but rather whether they are deep and muddy. The meadows to the west of Oxford have a gravel subsoil and do not become foundrous, and probably it will be found that this crossing has less drawbacks than other possible crossing. Certainly the river and the meadows a short distance below Hinksey are sticky and the soil is clay.

Lastly, it may be objected that the plan of Oxford with a road running through it north and south, should imply that there was some way of crossing the river where now is Folly bridge. It is a serious point, but not so serious if it is remembered that the road running to the south gate was originally small and insignificant, not like the roads which ran to the north gate and the east gate. The road from Carfax southward was wide only as far as Pembroke street, and it was not for the purpose of traffic but as a market place. At that point it became a road of only 20 or 24 feet in width, until Cardinal Wolsey when he built Christ Church threw the buildings back on both sides, and made a wide road to the south gate. After four hundred years the city is continuing the work of the cardinal, and intends to make a wide road as far as Folly bridge. Originally the approach to south gate was much like the approach to little gate, which led only to the meadows where the Black Friars were ultimately settled.

PLATE I



THE STEP PYRAMID, SAQQARA, EGYPT

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facing p. 461

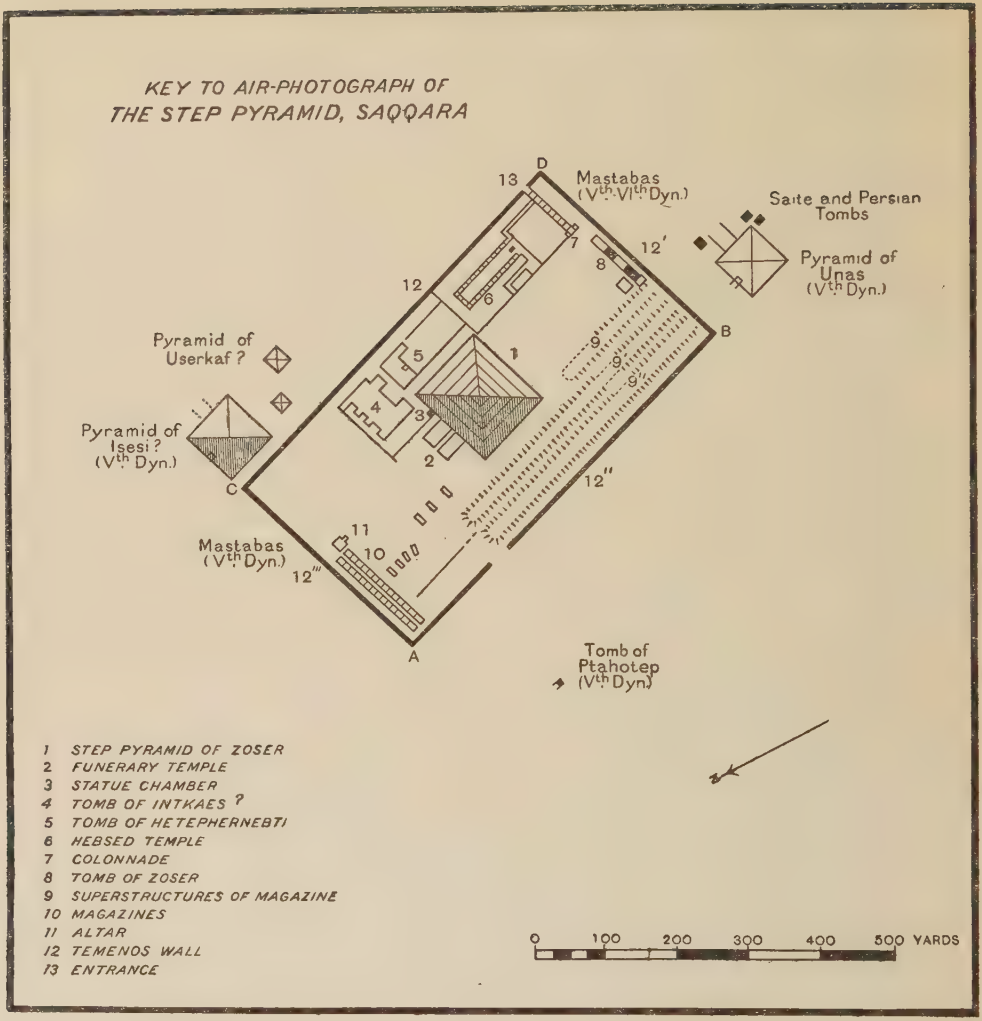
Notes and News

THE STEP PYRAMID, SAQQARA

The accompanying air photograph of the Step Pyramid at Saqqara was taken in the early morning. It clearly shows the excavations carried out by the Department of Antiquities of the Egyptian Government during the last three seasons. The key explains the relative positions and names of the various buildings discovered.

The Step Pyramid was built as the tomb or cenotaph of Pharaoh Zoser (Djeser) of the Third Dynasty. It is built of roughly dressed blocks of local grey-brown limestone cased with fine white limestone from the Mokattam Hills on the other side of the Nile. The casing was in steps. The Pyramid is the oldest surviving building in stone in Egypt. The funerary Temple (2) lies on the north side of the Pyramid. Close to it is the *serdab* or statue chamber (3) in which the seated limestone statue of the king was found in position.

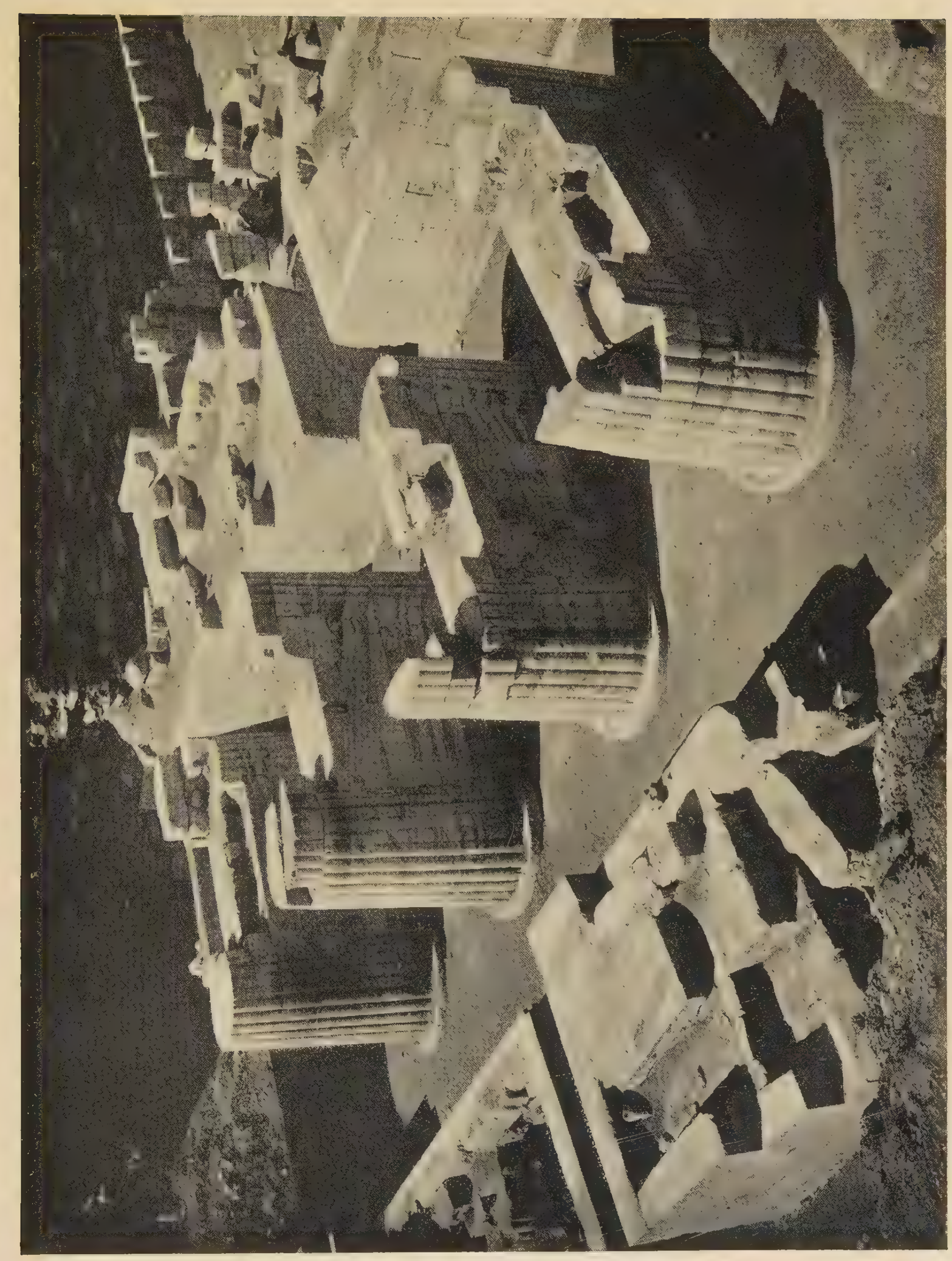
Zoser laid out a great quadrangle or Temenos round his Pyramid to contain the tombs of himself and the two royal daughters, Int·ka·es and Hetep·hernebti. The names of these royal daughters, or possibly queens, and that of the king are the only names on the numerous boundary stelae which marked off the desert area selected by Zoser. The stelae were taken down as the work was completed and were used as building material. Within the enclosure or Temenos A B C D there are only two tombs which are not the king's, and these, 4 and 5 at the north-east corner of the Pyramid, must almost certainly be the tombs of the two royal daughters, but as the tomb chambers had been plundered complete indentification is impossible. Besides the funerary temple, the king built another temple of a different type—the Hebsed temple (6) to celebrate the completion of 30 years reign. It is a courtyard surrounded by a number of shrines each of which may represent one of the districts of Egypt. A narrow passage connects this temple with the entrance colonnade (7) with its rows of columns once over six metres high. These columns are imitations in stone of the bundles of reeds



KEY TO AIR-PHOTOGRAPH OF THE STEP PYRAMID, SAQQARA

1 STEP PYRAMID OF ZOSER
2 FUNERARY TEMPLE
3 STATUE CHAMBER
4 TOMB OF INTKAES ?
5 TOMB OF HETEPHERNEBTI
6 HEBSED TEMPLE
7 COLONNADE
8 TOMB OF ZOSER
9 SUPERSTRUCTURES OF MAGAZINE
10 MAGAZINES
11 ALTAR
12 TEMENOS WALL
13 ENTRANCE

PLATE II



FASCICULATED COLUMNS AT WEST END OF COLONNADE, STEP PYRAMID, SAQQARA

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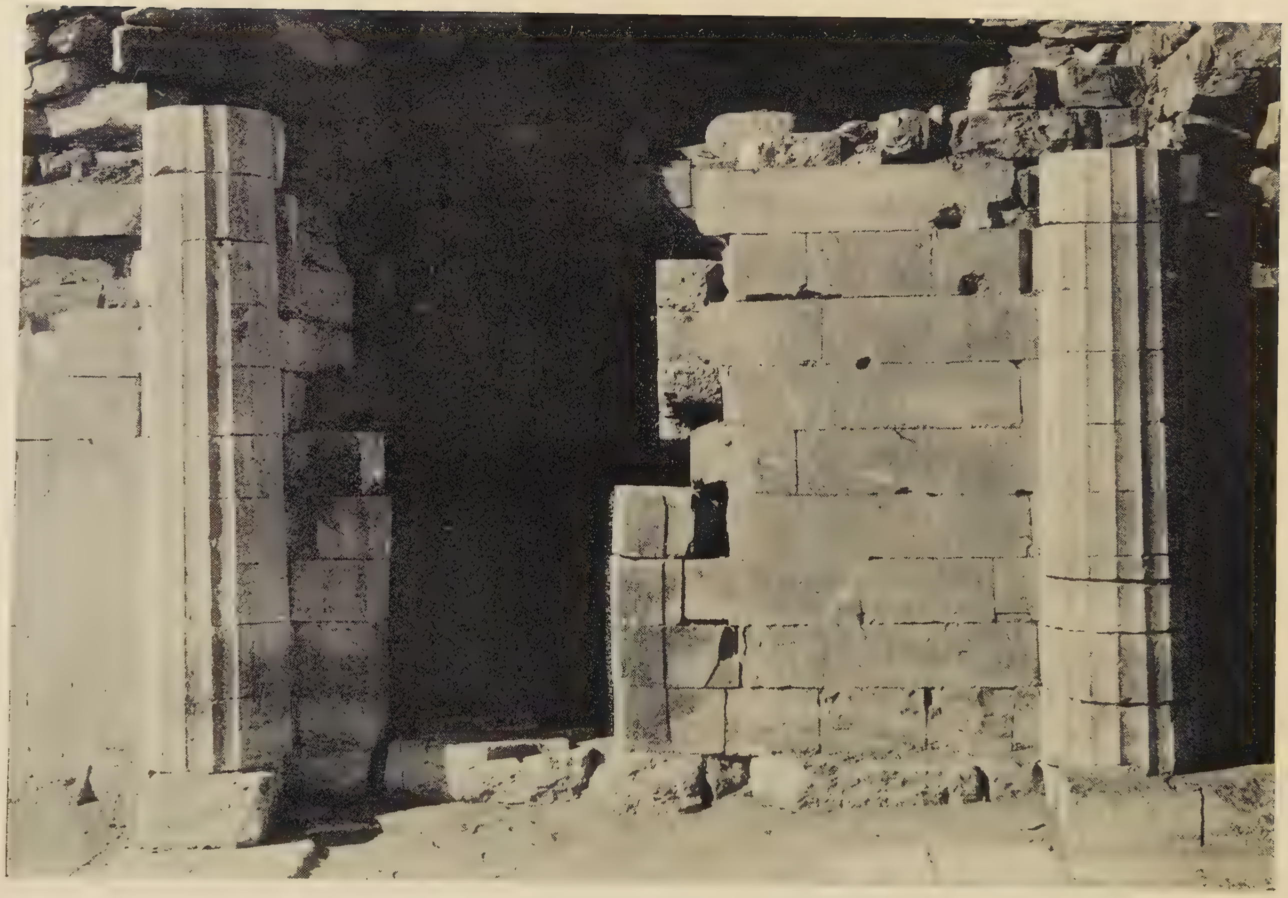
facing p. 462

PLATE III



FLUTED COLUMNS, FACADE OF TOMB-CHAPEL OF INTKAES, STEP PYRAMID, SAQQARA

Ph. Royal Air Force, Crown Copyright Reserved which supported the roof of the primitive Egyptian huts. The other type of column met with is fluted, and imitates either some vegetable form, or reeds split vertically so as to expose the hollow interior. Reeds split in this way and made into bundles with alternate concave and convex layers would form a very compact column, and perhaps the only column possible to builders in a river valley subject to annual inundation, which would destroy all buildings of stone or brick in an age when the four sites had not risen high enough to provide foundations for permanent buildings in more durable materials.

At the south end of the Temenos is a great tomb (8) made for Zoser but apparently not his burial place. Like the Pyramid it contains blue tiled rooms and has reliefs of the king with inscriptions which apparently commemorate his visits to different parts of his kingdom.

On the west side of the Temenos are long mounds of builders' rubbish between retaining walls. These are the superstructures (9) of subterranean magazines which yielded great quantities of broken stone vessels. Another series of magazines (10) run along the inside of the north wall of the Temenos and perhaps furnished offerings for the great altar (11). The contents of these magazines were grain and fruits.

The Temenos wall itself (12) is a great bank of builders' waste from the construction of the Pyramid enclosed between retaining walls of local stone, the whole being cased with fine white limestone and built to imitate the mud brick walls of an archaic fortress or city complete with projecting towers or bastions at intervals, entrances with the closed gates carved in stone and ranges of loopholes. The only entrance (13) is at the east end of the colonnade between larger projecting towers.

The perfection of the masonry makes it difficult to believe that these stone buildings are the oldest surviving in Egypt, but the imitation of brickwork and reed construction follows the law which makes every fresh change in material imitate the forms associated with the material previously in use, a stage which precedes the realization of the constructional properties natural to the new material. This archaic limitation was in two generations left behind by the builders of the great Pyramids of the fourth dynasty, although the Egyptians retained to the end columns in imitation of the lotus and the papyrus derived from the primitive constructions of their remote ancestors.

The buildings uncovered at the Step Pyramid reveal a new and the earliest chapter in the history of Egyptian stone architecture.

C. M. FIRTH.

THE EVANS COLLECTION

The following notes on this Collection supplement the extracts from the Annual Report of the Visitors of the Ashmolean Museum for 1927 which were printed in the September number of ANTIQUITY (vol. II, 351–3) by permission of Mr Thurlow Leeds, Keeper of the Museum.

The Evans Collection includes axes and other implements of stone from Cretan and mainland sites, a notable specimen being a perforated mace-head from Pergamon ; bronze weapons from Amorgos, Crete, and the mainland, for the most part of familiar types, among them massive double-axes of the Iron Age. Of special interest are two bronze swords of mid-European form from Graditza, Thessaly, affording a stepping-stone in the southward movement which brought a similar weapon to Mycenae.

WEST EUROPEAN SECTION

‘ *Bronze Age.* No more is possible than a bare summary of the increase that has accrued to this section from the Honorary Keeper's gift, but even so its value for a comparative study of this period of European archaeology leaps to the eye. Hardly a country but is represented in some measure, and many abundantly so, while the interrelations of various regions are often strikingly illustrated.

‘ (*a*) *Italy.* Weapons of almost every class ; notably handled daggers of an early type ; a socketed axe with part of its original bronze-sheathed handle of the type borne by warriors of the figured situlae of the Early Iron Age ; a well preserved sword with wooden hilt studded with bronze rivets.

‘ (*b*) *Switzerland.* A comprehensive series from the Lake Dwellings ; axes, wavy-backed knives, pins, rings, fish-hooks, and a host of other small objects. A remarkable axe from Brigue has its socket at right angles to the blade ; on the casting of the socket the method of binding which preceded the invention of the socket is reproduced. It is accompanied by a dagger and bracelet and may be of Iron Age date.

‘ (*c*) *Danubian Area.* A small but noteworthy group collected by the donor in this region includes the Makarska hoard with its anvil-hammer and its unusual socketed axes of Syrian type. Other axes with affinities farther north indicate the source of allied specimens and an ingot-axe from Apulia in the Italian series.

‘(*d*) *Hungary*. An initial period with implements in pure copper passes to the high-water mark, attained at the middle of a long bronze age, here demonstrated by a wide range of axe-types, several fine swords, and the distinctive Hungarian spiral ornaments, to be succeeded by simpler forms which mark a period of stagnation when other parts of Europe had long passed to the use of iron.

‘(*e*) *Germany, Austria, and Czecho-Slovakia*. The southern region bordering the Alps with close affinities to Switzerland and Italy, a central area reaching from the Rhine to Silesia, and the northern plain, close kin to the Scandinavian province, are all well represented, their individuality emphasized by occasional specimens exported from one region to another.

‘(*f*) *Scandinavia*. The vigorous and long-lived Bronze Age of the North is documented by a series sufficiently rich and distinctive to allow of a clear comprehension of its evolution throughout some 1,400 years. A large group of “ tutuli ”, with admirably engraved spirals, two gorgets, and other objects, clearly from one grave, are a feature of the earlier stages, while from the later an example of the exclusively northern “ dosen ” or looped bowls, torcs, razors, and the like illustrate the changes which Scandinavian culture and ornament underwent as the result of the infiltration of southern (Italian) products and decorative motives. With the bronzes are a few pottery vases from Danish sources.

‘A large selection of the Central European, Hungarian, and Scandinavian series has already been placed on exhibition.

‘(*g*) *France*. Implements from almost every part of the country bring out clearly the regional individuality which marks much of the culture of France of this period, and on the routes by which trade passed light is thrown by several rich hoards. One entirely of palstaves from Tours marks one of the points of convergence on the Loire of routes from the northern coasts whither came the magnificent gold torc, doubtless of Irish manufacture, found with late implements at Fresné-la-Mère, in the department of Calvados. Yet another line of traffic southwards is indicated by a second hoard of palstaves from Abbeville, another of broken bronze from the Seine, and, lastly, by a third very striking collection from Dreuil, near Amiens, in which a knife and other objects of Swiss types link on to those foreign elements from the same quarter which reached south-east Britain in the late Bronze Age. Finally, the important route by way of the Garonne to the Mediterranean is marked by a gold torc and gold twisted rings, again probably of Irish fabric, found near Carcassonne.

‘ (*h*) *Spain*. Copper implements, pottery, &c., supplement the collections from El Argar and other south-eastern sites already in the Museum. Halberds and double-looped axes indicate the origin of both types to be found in the British portion of the collections.

‘ *Iron Age*. Additions to this section comprise one of the outstanding constituents of the Evans Collection, namely, a series of objects from Hallstatt, the eponymous cemetery of the earlier part of this period in Europe. Bronze bowls, shield-bosses, bracelets, gold and bronze ornaments, amber beads, and bronze and iron weapons, among them a huge iron blade in its bronze scabbard, go far to fill a long-felt gap in the prehistoric collections. Their value for study is greatly enhanced by the accompanying gift of a copy of the rare hand-painted album of the results of Ramsauer’s excavations from 1847 to 1863, a valuable supplement to von Sacken’s *Das Grabfeld von Hallstatt*.

‘ To the late Hallstatt extension westwards belong two fibulae of Spanish or southern French origin, but with a northern French provenance ; to the La Tène period a large series of La Tène I fibulae from Dux, Bohemia ; and others of various dates from other sites ; torcs with buffer-ends, a bridle-bit, and a bull’s-head mount are all typical pieces from Central Europe and France.

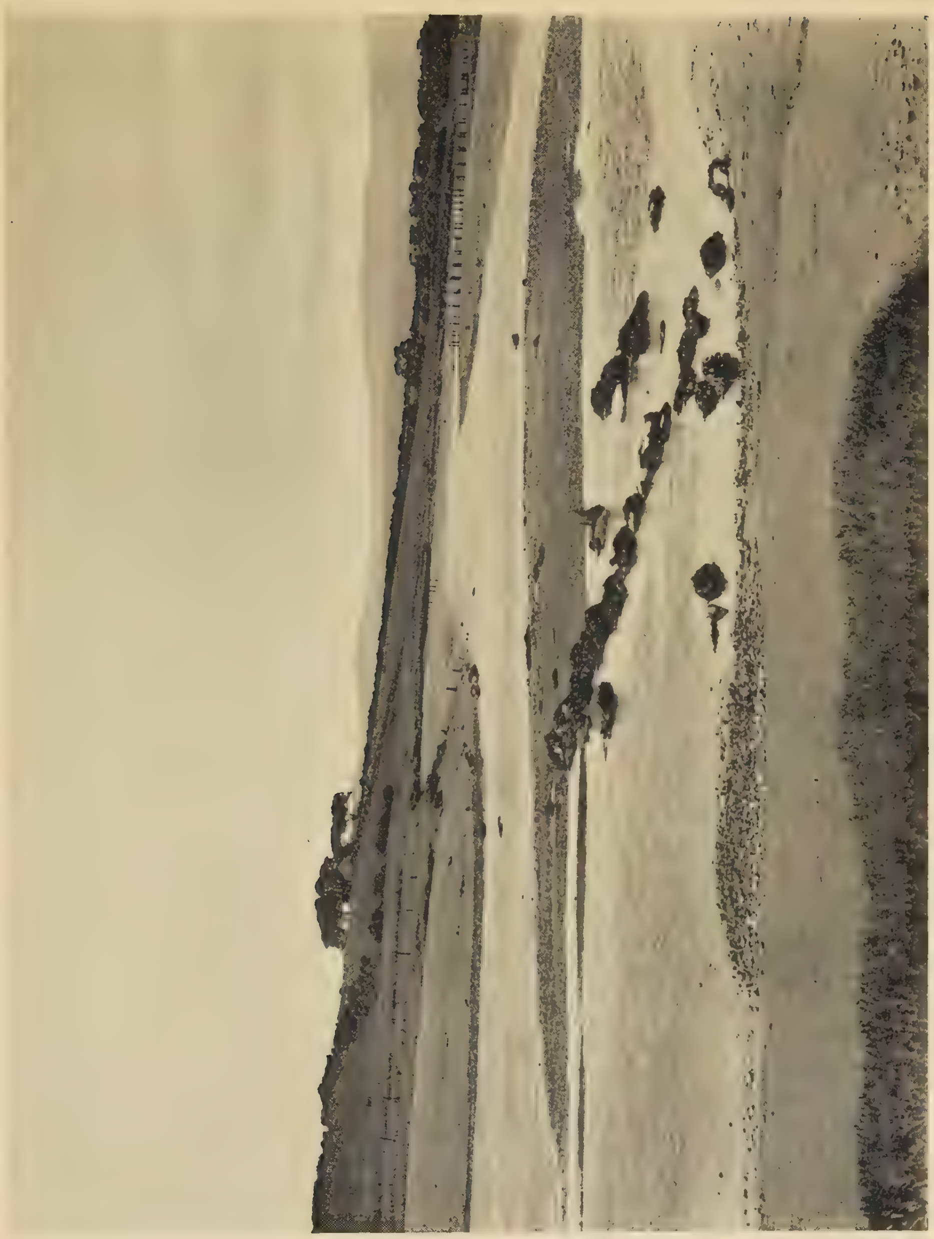
‘ Among Italian antiquities of the period are bronze fibulae, clasps, four finely engraved shield-disks, and a remarkable sword with leaf-shaped iron blade and clumsy horned hilt in bronze, a monstrous reproduction of a late Hallstatt type ’.

AN ANCIENT FORD

The beautiful views reproduced on the plates opposite were taken by Miss Mary C. Fair, to whom we are indebted for them. Miss Fair’s account in the *Transactions of the Cumberland & Westmorland Archaeological Society* (to appear shortly) gives full details, here abridged.

‘ The ford was noticed some thirty years ago by my late father and myself when fishing on the river Mite, from Ravenglass (on the west coast of Cumberland). A venerable heron, alluded to locally as “ Jammy Hernsew ”, took up his position evening after evening on what looked like conveniently placed boulders showing through the mud of the river channel at low tide. Observation of this bird and his vantage-point revealed that the “ boulders ” were not the work of nature but

PLATE I

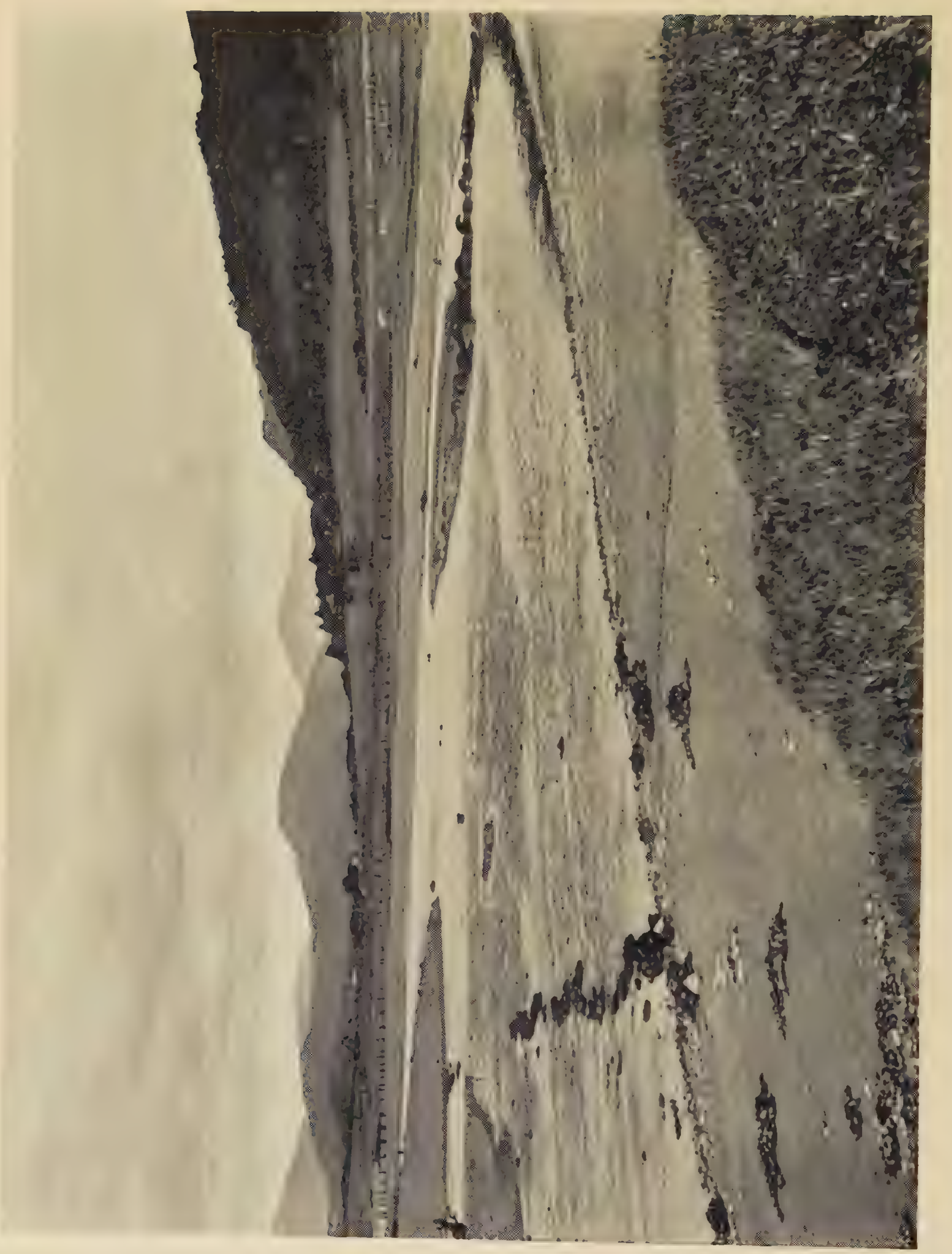


OLD FORD OF RIVER MITE, CUMBERLAND: EAST KERB OF CAUSEWAY

Ph. Miss M. C. Fair

facing p. 466

PLATE II



OLD FORD OF RIVER MITE, CUMBERLAND, LOOKING TOWARDS SEA FELL

Ph. Miss M. C. Fair

the massive kerb-stones of an elaborately constructed causeway forming a ford carrying some long-forgotten highway across the river. My father at the time suggested that this was the ford by which the Roman road passed north from Ravenglass to Moresby, but for a while other matters (including the Great War) intervened, and nothing much was done in the way of examining the possibilities of the place.

'Now rains have descended and floods have scoured the river-channel with such effect that several points of interest have been revealed by the washing away, for a few tides, of the mud concealing the causeway. This reveals it as a massively constructed work enabling the river Mite (whose bed hereabouts is mostly of soft mud) to be crossed with safety and comfort at low tide.

'The ford at the present time seems to have dropped out of local memory, and I have not seen any notice of it in topographical notes or descriptions of the district'.

The whole thing has a decidedly Roman look about it; if so, the tracing of the Roman road which led down to it from either side should be a task of no difficulty and great interest—even of excitement! We commend it to any of our readers who may want an excuse for a walking-tour. Miss Fair, in her article referred to above, has provided indications of the probable course for the first few hundred yards in each direction. The ford falls on sheet 82 NE of the Ordnance Map (6 in. to mile series).

EXCAVATIONS AT ALCHESTER, OXON.

The third season's excavation at Alchester was carried on for 6 weeks during July and August 1928, with very satisfactory results. The chronology of this particularly interesting site is gradually becoming clearer with each successive year. It seems evident that there was an intensive occupation soon after the middle of the 1st century, if not earlier, for the rampart region at least seems honeycombed with small ditches running through the gravel, apparently for drainage purposes (they average about 3½ feet wide and 2½ deep). These ditches (at a low level, about 6 to 10 feet below the surface) contain large quantities of pottery ranging from Claudian to Domitianic. Over them have been built the structures of the 1st stone period, *e.g.*, a house (with lower courses of walls and floors in excellent preservation) of the period Trajan–Hadrian, and the tremendously strong foundations of a tower at the north-east corner of the town. Nothing that the excavation has yielded is more surprising than this enormously strong building work, which is certainly not later than the 2nd century. It was found last year in a rampart foundation near the east gate, and between that point and the north-east corner. This year the foundations of the corner tower prove to be of exactly the same strength and style. The small finds include a number of trinkets from the house, *e.g.*, a delicate bone comb, a bronze spiral-knotted swivel chain, a decorated bone knife-handle, one of the long narrow spoons for toilet use, and fragments of several delicate glass cups and pillar-moulded glass bowls. In addition two conical querns have been found, one of Hertfordshire stone, several attractive fibulae (including one of the Aucissa type, inscribed), a considerable amount of Samian ware, and coins ranging from Nerva to late 4th century, with one excellent specimen each of Tetricus and Constantine the Great. In the disturbed surface levels over the house (especially on that side towards the interior of the town), a good deal of late 3rd and 4th century pottery has turned up ; thus evidence has again been obtained to prove the continued existence of Alchester practically throughout the Roman occupation.

SAINT COLUMBA

We have received the following letter from Dr W. Douglas Simpson in reference to the review of his book, *The Historical Saint Columba*, in the September number of ANTIQUITY, pp. 372–5:—

SIR,

I have derived great pleasure from Professor Macalister's sprightly and stimulating—and, may I add, thoroughly Irish—review of my book on Saint Columba, published in the last number of ANTIQUITY. In the course of his remarks Professor Macalister sets forth views upon the ethnology of the Picts, and the linguistic content of the Ogham inscriptions in Scotland, upon which I do not feel called on to comment here, as these matters are nowhere dealt with in my book : but I gratefully avail myself of the Editor's courtesy to reply to certain points of fact that are raised.

As to the round tower west of the cathedral at Iona, Professor Macalister does not seem to be aware that the circular building above ground, on the thin walls of which he remarks, is a comparatively modern 'restoration', under the mistaken idea that the structure had been a well ; and that the late Dr Macgregor Chalmers, excavating underneath it in 1908, found the stump of an unmistakable round tower of quite standard dimensions, 19 feet in diameter over walls 6 feet thick. This stump is correctly planned beneath the ‘ well ’ in the official survey recently published by the Iona Trustees.

The question of the Pagan or Christian origin of the Pictish symbols is too large and too controversial to be discussed here ; and in my book (p. 75) I have observed that it does not affect my thesis, which is that, whether Christian or Pagan in their origin, these symbols were at all events capable in their entirety of bearing a Christian meaning. But Professor Macalister is not correct in affirming that ‘ the art of the superadded crosses is totally different from that of the symbols and the native animal sculpture associated with them ’. Some of the incised symbols on the Golspie stone, now at Dunrobin, for example, are decorated with entirely characteristic late Celtic spiral work. Also, stones of the most primitive class, bearing incised symbols without the cross, frequently show similar late Celtic spiral and other ornament. The Dunnichen stone is a conclusive example : its incised symbols, which are not associated with any cross, are ‘ beautifully ornamented with spirals showing a marked affinity with those of the Pagan Celtic style of the ages of Iron and Bronze ’. (*Early Christian Monuments of Scotland*, part 3, p. 207). Other instances might easily be multiplied. Thus Professor Macalister’s attempt to differentiate between the art characteristics of the symbols and the crosses is found to be illusory.

In regard to the cormorants on the Lindisfarne Codex, the reader who refers to my book will note that I have deduced no argument from them of the kind which Professor Macalister sets himself to refute : all I have done is to invite attention to an interesting and suggestive fact. The thesis that the manuscript was written at St. Cuthbert’s monastery, as Aldred’s colophon indicates, has been developed by Professor Baldwin Brown—in opposition to Professor Macalister’s contention that the manuscript is Irish—from arguments far more cogent than the presence of cormorants at Lindisfarne.

Lastly, may I be allowed to disclaim the charge of iconoclasm—if indeed this be a crime. I entertain no prejudice for or against Columba: I have merely sought to depict him as I think he was. And in showing him forth as a living and passionate actor on the troubled stage of his life and environment, instead of the conventional, cut-to-pattern saint of current accounts, I conceive that I have revealed him in every particular as a greater, more intelligible, and infinitely more attractive figure in early Scottish history.

ANCIENT BRITISH BURIALS, NORTHUMBERLAND

An interesting burial mound has been excavated recently by Messrs R. C. and W. P. Hedley at Pike Hill, near Stamfordham, Northumberland. The mound, which has been much denuded by cultivation and weathering, was about 36 feet by 33 feet and 18 inches above the original surface. It consisted almost entirely of earth. In the centre of the mound there was a primary burial by inhumation made in an irregular oval excavation in the underlying shale. This excavation was about 3 feet deep, with sides somewhat steeply inclined inwards. It was lined by flat stones set edge upwards against the shale ; on these stones was placed a massive sandstone cover. The cist was 2 feet 9 inches long by 2 feet wide and 12 inches deep, with an orientation on the longer axis of NE by E. Water was standing to a depth of several inches in the cist and no remains whatever of the burial were left. About 2 feet south-west of the primary burial and with its floor resting upon the undisturbed shale, was found a second cist 2 feet 10 inches by 2 feet by 17 inches. The floor of the cist was roughly paved with small stones. The orientation is nearly due E and W. On the centre of the inner face of the south side stone is a fine symmetrical ' pit ' marking about 1½ inches in diameter and ¾ inches in depth, quite distinctly and sharply cut. Three feet from this second cist and overlying the primary burial was a rough unshaped sandstone slab with a fine and unusual series of ' cup ' markings upon it. The stone is 24 inches by 21 inches and 5 inches thick. It would appear that this stone was one of two or more cover-stones of the second cist.

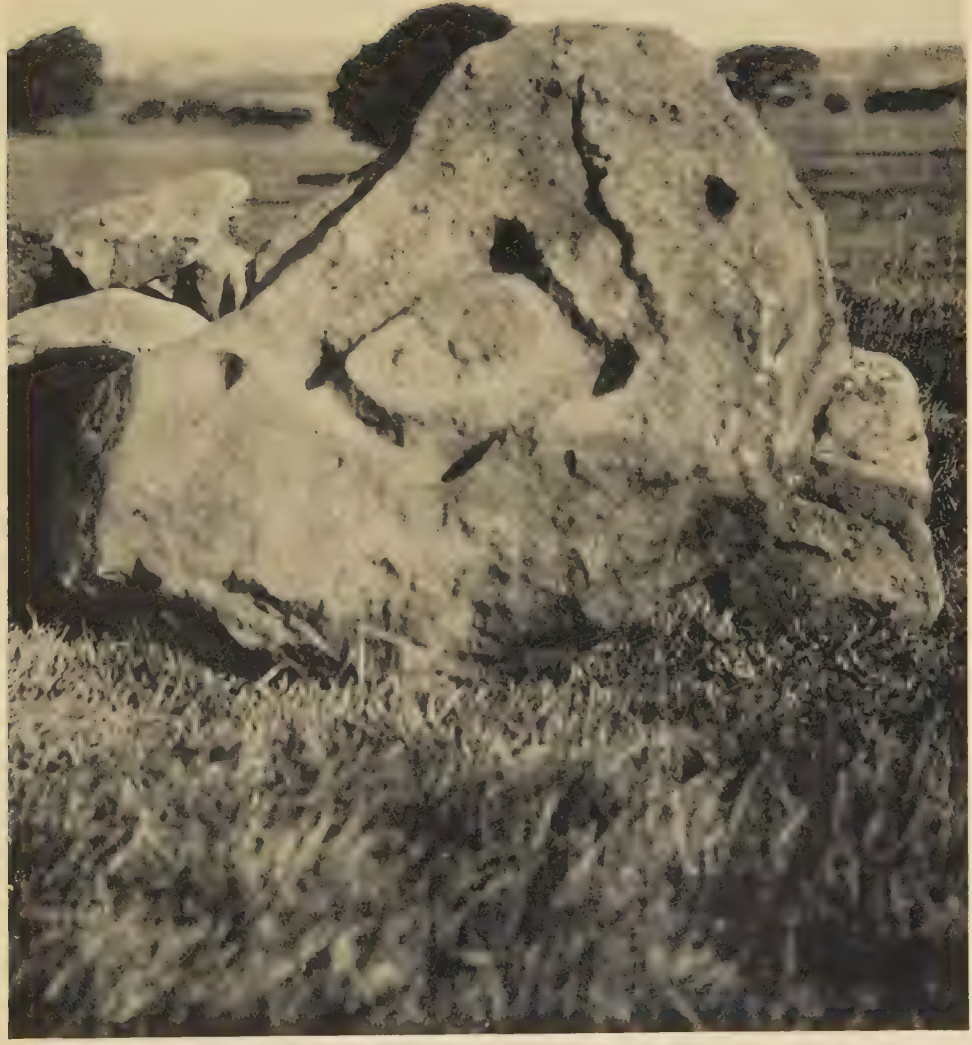
Several instances of these ' cup and ring ' markings have been found in direct association with burials ; and at Old Bewick, Routin Lynn, Doddington and Lordenshaws are particularly fine series of similar rock-markings in intimate association with important earthworks.

An illustration of the Pike Hill ' cup-marked ' stone is given. The stone is in the possession of Mr E. F. Riddell-Blount, of Cheeseburn Grange, who is proprietor of the site. R. CECIL HEDLEY.

DOLMENS OF CENTRAL FRANCE

In an interesting communication sent to us on the subject of moving heavy stones, which was discussed in the correspondence printed in ANTIQUITY, II, 347–50, Lieutenant R. D. Martin, R.E., gives the results of practical experience in moving a block of stone weighing about 18 tons.

' The stone was an obelisk, about 24 feet long, the butt being 4 feet



CUP-MARKED STONE, PIKE HILL, NORTHUMBERLAND

facing p. 470

square and the tip just under 3 feet square. It had to be moved over some 300–400 yards of fairly level ground, though with a few rises and falls, the worst gradient being about 1 in 15. Railway sleepers, hard wood rollers about 5 inches in diameter, wooden levers, and some 3-inch rope were used, together with a few iron crowbars which were really hardly required. About 50 or 60 men were employed, of whom one-third were used for moving the sleepers and rollers. There were never more than 40 men actually pulling ropes or using levers. The time taken to move the stone from its position to the metalled road, where other methods of transport were possible, was about two days and a half.

'With regard to splintering, my experience was that placed about 2 feet apart (not 6 feet as calculated by Mr Clarke) the rollers did splinter, but not sufficiently to interfere with the work; a dozen or two were destroyed in all.

'It will be noted that the butt end of the stone was as thick as the largest dolmen and thicker than most of them.

'In view of this experience I think that 300 men, of whom 200 only would be engaged in pulling, could transport the largest stone of those mentioned by Admiral Somerville, *i.e.*, that weighing 86 tons, provided they had the means used by me. One would imagine that the neolithic engineer would be able to get timber up to 6 inches diameter (I understand 'Woodhenge' is neolithic) which he could use for runway, rollers and levers, and that he would also have good hide ropes (which would surely stand a strain of 5 cwt.); with this I estimate that he would not require more than 500 men to transport the stone.

'Mr E. H. Stone's figures quoted by Admiral Somerville may be taken as correct but they are misapplied lower on the page (350); in discussing the lever Admiral Somerville neglects the mechanical advantage gained by that device, and in dealing with the pull on ropes he assumes that the frictional resistance is equal to the weight of stone—these fallacies do not require comment.

'It is not necessary that the stone shall be *lifted* to place it on the rollers; the earth under it could be removed little by little and the rollers inserted. With regard to lifting the capsills an earthen ramp, if given a year to consolidate, would be firm enough ground from which to pull them into position.

'The mystery with which Admiral Somerville surrounds the problem is thus to my mind dispelled, though I do not make light of the difficulties involved. The slow and tedious preparation required, the making of hide ropes, the ingenuity shown in the use of levers and rollers and building of ramps, combine to fill me with admiration for the work of my predecessor the neolithic engineer '.

WOOD FRAGMENTS FROM A LAKE SETTLEMENT AT AUVERNIER, SWITZERLAND

Having had the opportunity to examine and make microscopic sections of some few of the wood fragments excavated at Neuchatel by Mons. Vouga, I am glad to be able to present the following report.

The specimens submitted to me for investigation represent three common European woods, namely :—COMMON OAK (*Quercus sp.*), SILVER BIRCH (*Betula sp.*), SILVER FIR (*Abies sp.*). All fragments received were identified as being one or other of these, which is in no way surprising.

Of this batch of samples, the oak wood was mostly in the form of much (laterally) compressed chips, apparently broken from a log, or pile, of decent size. The specimen of fir consisted of a portion of a small branch, so it seemed, which may, or may not, have formed a part of the structure of a lake dwelling. Together with these remains there was also a piece of birch bark.

The fact that the fragments of oak have been laterally compressed to one-quarter, or even one-eighth, of their original thickness is of interest, since it seems to indicate that a very great pressure might at some time have been exerted upon this material. I am not in a position to say exactly what force would be needed to crush normal oak wood to such an extent, but it would undoubtedly be of a very high order—greater, I should say, than could ordinarily be exerted by a few feet of superincumbent silt, or even the weight of the original dwellings.

Now the approximate density of one of these oak fragments is 48 lb./cu.ft., being decidedly high compared with a normal value for European oak of similar growth of, say, 42 lb./cu.ft. Actually, however, an examination of the microscopic structure shows that the wood has been compressed to about one-seventh of its original volume, so that one might expect it to have a density of some 294 lb./cu.ft., or about two-thirds that of iron. But this is not the case. Clearly, then, since the wood has been so much crushed, yet still retains almost a normal density, a great deal of internal decay, or solution, must have taken place before such compression occurred. And in this way, one can readily understand how these oak fragments came to be considerably crushed by relatively inconsiderable forces.

PLATE I

FIG. 1. Transverse section (x 15) of Oak wood from one of the piles, much compressed laterally

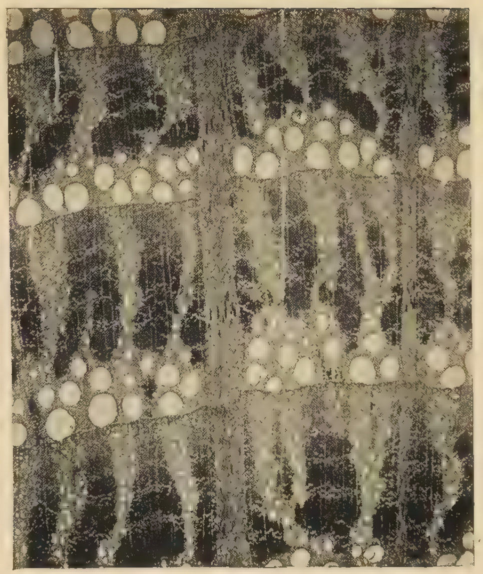


FIG. 2. Transverse section of normal, non-compressed Oak (x 15); compare with fig. 1

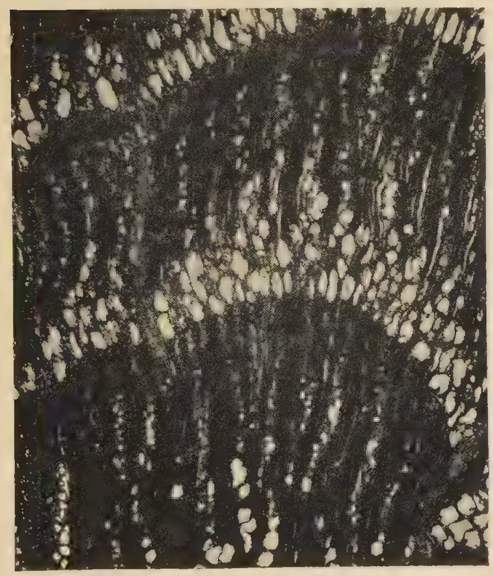


FIG. 3. Oak wood, as in fig. 1, only less compressed. Fragment from near centre of tree

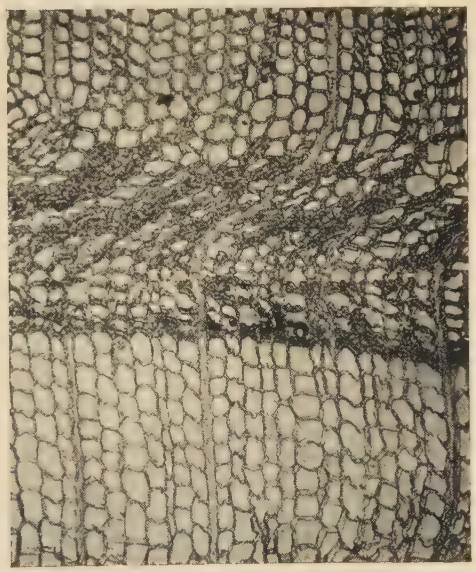


FIG. 4. Transverse section of a part of the small branch of Fir (x 60), to show a line of failure, under stress, along margin of growth-ring

NOTE.—FIGS. 1-6 represent views of the anatomical structure of the woods as seen with the aid of a low power of a compound microscope

PLATE II

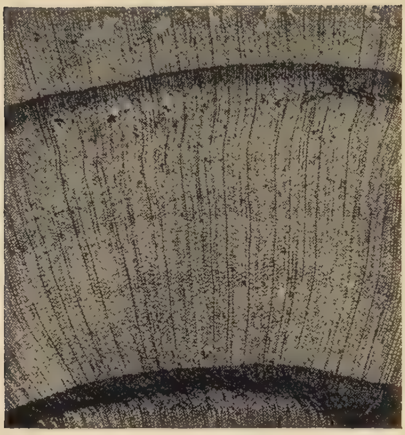


Fig. 5. Transverse section of Silver Fir (x 15 linear), as in fig. 4, showing two growth-rings

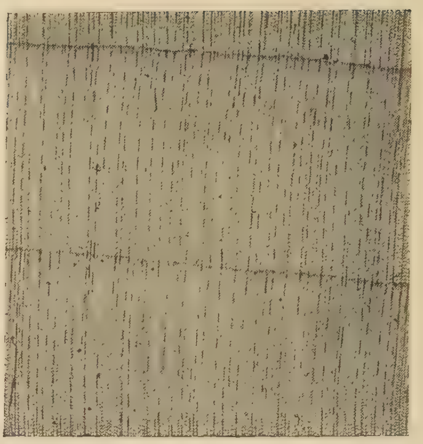


Fig. 6. Transverse section of normal wood of *Abies*, the Silver Fir; compare with excavated wood, fig. 5

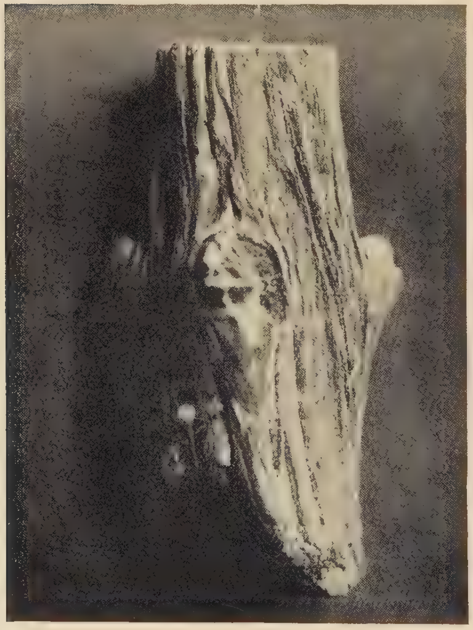


Fig. 7. Photo of the piece of Silver Fir (natural size)

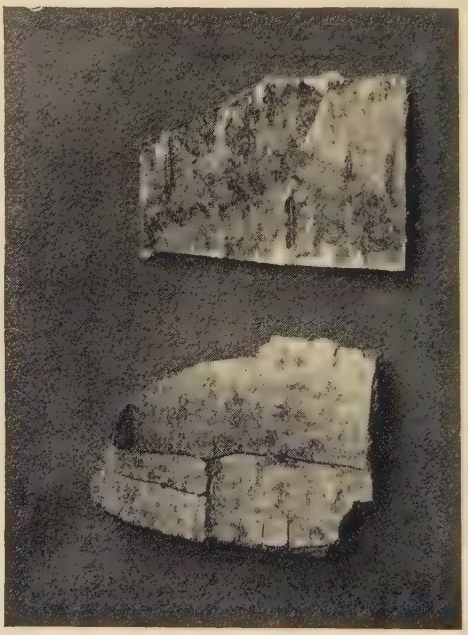


Fig. 8. Photo of fragments of excavated (bottom) and fresh (top) bark from Silver Birch (natural size)

The sample of Silver Fir also exhibits some internal failure, but this is most reasonably attributed to the stresses and strains set up within the heterogeneous substance of the wood itself, subsequent to excavation during the process of drying and shrinkage.

These various features are roughly demonstrated by the accompanying illustrations.

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A REPUTED LAKE DWELLING SITE NEAR TREGARON

During the summer of 1928 a shepherd discovered a number of piles in a peat bog approximately 1450 feet above sea level, about 10–11 miles east of Tregaron, Cardiganshire, ½ mile from the source of the river Tywi, on the Cardiganshire side of the Brecknockshire–Cardiganshire border. The find was reported to Mr Jenkin Lloyd, Pant Tregaron, who, with Mr Ernest Davies, Velindre, Lampeter, provided much of the following information.

The peat bog is a depression 180 yards long, and 120 yards wide, the peat being from 3 to 10 feet deep. Beneath the peat is a whitish clay which contains traces of charcoal (probably natural). In the peat, at intervals of about 4 yards apart, in a straight line, are ten piles, of an average length of 2 feet, all roughly pointed.

Mr H. A. Hyde, Keeper of Botany in the National Museum of Wales, has examined a fragment from the pile now in Mr Lloyd's possession and reports :—

'Externally the specimen resembled in colour a recently cut piece of oak but it was abnormally light in weight and easily broken. On cutting sections for microscopic examination, I found that the wood was quite abnormally soft, and easy to cut with a razor. Transverse and longitudinal sections were examined. The specimen was found to be one of oak (*Quercus robur*). The presence of cellular infillings [tyloses] in the larger vessels indicated that the wood was heartwood. Signs of degeneration were observed in the walls of the fibre, but no fungal hyphae were seen. The results point to the specimen having undergone degeneration under unusual conditions, but I am unable to suggest the nature of those conditions : at all events, they differed from those under which Bog Oak is formed, and the material differs similarly from the oak posts from Caerleon'.

IORWERTH C. PEATE.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

The season in Iraq will be one of great activity. Mr C. L. Woolley resumes his great work at Ur of the Chaldees. The Weld-Blundell (Oxford) Field Museum Expedition, of which Dr S. H. Langdon is Director, will be at Kish. M. Louis Watelin is in charge of the Expedition, which will concentrate on the brick tomb cemetery discovered last year in the lowest stratum, 45–50 feet below mound level, in the temple mound beside the tower of Hursagkalamma. In addition to these the following Expeditions will be at work :—

The joint expedition of Harvard University and the American School of Oriental Research under the charge of Professor Chiera, at Tarkalan, near Kirkuk;

Professor Waterman, of the University of Michigan, will be at Tel-Omar, near Ctesiphon, where he hopes to find the lost town of Opis ;

The Deutsche Orient-Gesellschaft proposes to excavate at Ctesiphon and Seleucia, on both sides of the Tigris, under the direction of Dr Oscar Reuthen ;

The Notgemeinschaft der Deutschen Wissenschaft is sending Dr Julius Jordan to Warka, the Erech of Genesis, which is north of Ur ;

Mon. Père Legrain will be at Tel-O on behalf of the Louvre, Paris, which is assisted by the University of Pennsylvania ;

Dr R. Campbell Thompson hopes to continue his work at Nineveh.

* * *

The Egypt Exploration Society will this season excavate the site of Armant (Erment), near Luxor, and particularly the cemetery of the sacred Bulls of Hermonthis, discovered by Mr Robert Mond and Mr W. B. Emery. Mr Mond has withdrawn his claim on this concession in favour of the Society. Dr H. Frankfort will be in charge. Dr H. R. Hall describes the site in the *Daily Telegraph* of 1 October.

The Italian Archaeological Mission to Albania, with Dr Luigi Ugolini as Director, has been working at Butrinto, on Lake Vivari, within sight of Corfu. Dr Ugolini reports that he has made some interesting discoveries which illustrate the successive civilizations which occupied the town. Extensive remains of the city walls, built by the Greeks in the fifth century B.C., have been found. Under the wall of a building of considerable size—possibly baths—were some fine statutes of Greek workmanship, particularly one of a woman, draped, which Dr Ugolini thinks may be attributed to Praxiteles. Of the Byzantine period the most important discovery is a baptistery of fifth century A.D. The roof was supported by granite columns, taken from Roman buildings. The marble font is made in the shape of a Greek cross and is in the centre of a well-preserved mosaic pavement. (*The Times*, 15 October, p. 15, with illustrations).

* * *

Some remarkable examples of prehistoric pottery have been discovered in the province of Coclé, Panama, by Mr A. Hyatt Verrill, who has been excavating there for the past few years. Illustrations, in colour, are published in the *London News*, 13 October, accompanied by an article by Mr Verrill on other finds which he made on the site of a temple-like structure situated on a plain between Rio Caño and the Rio Grande.

* * *

The results of the season's work at Caerleon have been important. It is now established that the date of the fortress is 75 A.D., some 25 years later than hitherto thought. The defences are shown to have been a V-shaped ditch 25 feet wide by 8 feet deep, and a clay bank 20 feet wide by 8 feet high faced with a heavy timber palisade. Probably about 100 A.D. the outer face of the clay bank was strengthened with an embattled stone wall 5 feet thick. The wall was pierced by four symmetrical gateways and had an elaborate system of look-out turrets situated at regular intervals of 50 yards. A metalled roadway which skirted the base of the ramparts within has been proved in section to have been no less than 3 feet in thickness. Among the finds are a large marble slab with a dedicatory inscription of the Emperor Trajan, 100 A.D., and a fine length of Roman lead piping. (*The Times*, 26 September, p. 12).

The excavation of the Roman fort of Kanovium, near Conway, North Wales, has been continued this summer under the direction of Mr P. K. Baillie Reynolds. So far as the interior area is concerned the work is completed. In the *Praetorium* a series of post-holes was uncovered, outlining in part the timber buildings of the first century. The buildings appear for a time to have incorporated a stone-built *sacellum*. Evidence of coins and other finds confirms the conclusions formed from past seasons' work that the stone buildings which succeeded the timber constructions are early second century. Some interesting details are printed in *The Times*, 15 October (p. 10).

* * *

A quantity of cylindrical jet beads have been found in a Bronze Age burial ground at Poltalloch, Argyllshire. At the bottom of a grave near the same site an ornamented food-urn of baked clay was found. (*Glasgow Herald*, 27 September).

* * *

The foundation walls of a Roman Villa have been found at Hales, near Market Drayton in Staffordshire, the only Villa hitherto discovered in the northern part of the county. It is suggested that the site may be that of the military station of Mediolanum. (*The Times*, 24 September, p. 9).

* * *

An earthwork and a group of buildings on the well-known Roman site in Lydney Park, Gloucestershire, are being excavated by permission of Lord Bledisloe, under the auspices of the Society of Antiquaries of London, represented by Dr R. E. Mortimer Wheeler. The buildings occupied half the area of a camp or ' promontory fort ' and beneath the roadway of the main entrance pottery and other objects of late Iron Age have been found. A report of the work done this season is printed in *The Times*, 21 September (p. 11).

* * *

Investigations undertaken by Mr R. F. Parry in Gough's Cave at Cheddar (Somerset), have resulted in some interesting finds of human and animal remains, implements, and tools. The floor of limestone blocks, pebbles, and red cave earth was stripped off in 6-inch layers and the exact stratigraphical relation of every one of the multitude of objects was ascertained. Mr Parry informs us that layers 1 to 5 consisted of red cave earth; layer 6 showed a slight mixture of sand which increased with the depth to layer 16 and had a banded appearance in section; layers 17 to 23 were composed of a bed of gravel with water-worn limestone pebbles mixed with cave earth and sand; layer 24 was clay, and at depths of 12 feet to 12 feet 6 inches rock bottom was reached. A report on the various finds was communicated to *The Times*, 6 August, by Professor J. A. Davies, and a complete account will be published in the Proceedings of the Somerset Archaeological Society.

* * *

The work which has been pursued at Meare Lake village, near Glastonbury, for so many years by the Somerset Archaeological Society under the direction of Dr A. Bulleid and Mr St. George Gray was resumed during September. Particular attention was given to the structural remains of the dwelling mounds. One site proved to be a weaving establishment, and here 17 combs and over 20 spindle-whorls were found; the former, when compared with the considerable number already recovered from the village, include new types. On Meare Heath has been found a perfect Iron Age sword-scabbard of bronze, 30½ inches in length, engraved with typical La Tène ornament. (*The Times*, 4 September, p. 10; 11 September, p. 12; 18 September, p. 11).

* * *

Excavations have been continued at the prehistoric village of Skara Brae, on the southern shore of the Bay of Skail, in the parish of Sandwick, Orkney. On the invitation of H.M. Office of Works the Society of Antiquaries of Scotland asked Professor V. Gordon Childe to cooperate with the Office. Very interesting results are recorded by Professor Childe, with a plan of the village, in a letter to *The Times*, 3 September (p. 8), and an illustrated description of the site was published in the *London News*, 18 September. A full report will be made to the Society of Antiquaries of Scotland.

* * *

A report on the result of work at the Roman Villa at Otford, Kent, was communicated to *The Times*, 23 August (p. 8).

Professor Garstang has issued his first report on the Expedition organized by Sir Charles Marston for exploring the site of Hazor, the capital of the Canaanite kingdom of Jabin, which is situated four miles south-west of Lake Merom. (*The Times*, 3 October, p. 13).

◆ ◆ ◆

Mr H. L. Bradfer-Lawrence, F.S.A., informs us that the position of the medieval encaustic tile factory at Bawsey, in Norfolk, has been re-discovered, and the site of one of the kilns excavated. Large quantities of broken and damaged tiles were unearthed together with a number of perfect specimens highly glazed. The designs on the tiles fall mainly into four groups :—heraldic, geometrical, inscribed, and figures of animals, birds and flowers. They are similar to those which have been found from time to time on the monastic and ecclesiastical sites in the neighbourhood.

◆ ◆ ◆

Mr S. E. Winbolt reports (*The Times*, 13 October, p. 9) on the excavation of a mound and exterior fosse, near Rudgwick, in Surrey, of which the character is nowhere recorded. On the 25-inch Ordnance Map of 1895 it is marked as a ' tumulus '. Cross-trenches were dug without finding any evidence of a burial mound and from his observations Mr Winbolt concludes that it is almost certainly an early Norman castle mound of which all knowledge has been lost.

◆ ◆ ◆

The North of England Excavation Committee of the Society of Antiquaries of Newcastle upon Tyne engaged in tracing the line of the Roman Wall have located a mile castle at East Walbottle, on the Newcastle–Carlisle road, seven miles west of Newcastle. It is of the normal type, 50 feet wide and about 60 feet long. The walls of the castle are 10 feet thick, which corresponds to the thickness of the Wall to the immediate west of Newcastle. It contains a complete internal building about 14 feet wide, with interior walls 3 feet high still standing, and stratified Roman débris which will be examined in due course. There were two types of mile castle on the Roman Wall, one containing 500 square yards, of which there are three known in Cumberland, and a smaller type containing about 330 square yards. (*The Times*, 27 October 1928, p. 9).

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY.

Classification and nomenclature of Beads and Pendants, by Horace C. Beck. *Archaeologia* (1928) LXXVII, 1–76, 85 figs.

A La Tène I brooch from Wales : with notes on the typology and distribution of these brooches in Britain, by Cyril Fox. *Archaeologia Cambrensis* (1927) LXXXII, 67–112, 29 figs.

Archaeological and topographical research in and near Rome, 1908–1928, by Thomas Ashby. *Quarterly Review*, October 1928 (no. 498), pp. 281–96.

A valuable survey, which is to be completed in a second article.

An archaeological tour above the Waziristan border, by Sir Aurel Stein. *Geographical Journal* (April 1928) LXXI, 377–80.

Contains notes on early 'painted pottery' sites discovered.

Las pinturas rupestres de los alrededores de Tormón (Teruel), by Hugo Obermaier and Henri Breuil. *Boletin de la Real Academia de la Historia.* [No details given on the author's reprint].

Reconnaissance aérienne au Ledja et au Safa (Mai 1927), par P. A. Poidebard. *Syria* (1928) IX, 114–23.

A preliminary report, illustrated by 6 air-photographs—3 vertical and 3 oblique. The region lies south of Damascus, between that place and The Hauran. Father Poidebard discovered numerous entirely new Roman sites and roads, which are plainly recorded on the published air-photographs.

L'Antiquité de l'homme dans l'Amerique du nord, par E. B. Renaud. *L'Anthropologie* (April 1928) XXXVIII, 23–49, with bibliography.

Sumerians, Semites and the origin of Copper-working, by H. Frankfort. *Antiquaries Journal* (April 1928) VIII, 217–35.

Excavations at Ur, 1927–8. By C. Leonard Woolley. *Antiquaries Journal* (October 1928) VIII, 415–48.

A very full description of the contents of the graves, illustrated by 18 plates.

Les provinces culturelles finnoises de l'âge récent de fer dans la Russie du nord, par A. M. Tallgren. *Eurasia Septentrionalis Asiatica* (1928) III, 3–24, sketch-map.

ENGLAND

Early Chessmen of Whale's bone excavated in Dorset, by O. M. Dalton. *Archaeologia* (1928) LXXVII, 77–86, plates V–VI.

A 'Romano-Celtic' temple near Harlow, Essex; and a note on the type, by R. E. M. Wheeler. *Antiquaries Journal* (July 1928) VIII, 300–26.

Full comparative notes on other examples in this country and abroad, with plans, bibliographical list and distribution-map.

Deerhurst [Gloucestershire] Priory Church: including the result of the excavations conducted during 1926, by W. H. Knowles. *Archaeologia* (1927) LXXVII, 141–64, 19 figs., 1 plate.

Also printed in *Trans. Bristol and Gloucestershire Arch. Soc.*, xlix, 221–58.

The Roman villas of the Isle of Wight, by C. A. Sherwin. *Proc. of the Isle of Wight Nat. Hist. Society* for 1926 (vol. I, part 7) pp. 425–35. (To be obtained from the Hon. Secretary, Wolverton, The Mall, Newport, I. of W.).

An excellent account of general interest, based on facts and written for the general reader. Contains a list of all the known villas, with some account of the sort of people who lived in them and their manner of living.

Flint arrowheads of the Isle of Wight, by Hubert F. Poole. Ib. id. pp. 436–43, illustrated.

Reculver: its Saxon Church and Cross, by C. R. Peers. *Archaeologia* (1927) LXXVII, 241–56, 9 figs., 3 plates.

St. Augustine's Abbey Church, Canterbury, before the Norman Conquest, by C. R. Peers and A. W. Clapham. Ib. id. pp. 201–18, 5 figs., 8 plates and suggested plan of the reconstructed church of Abbot Wulfric.

The carved stones at Breedon on the Hill, Leicestershire, and their position in the history of English art, by A. W. Clapham. *Archaeologia* (1927) LXXVII, 219–40, 2 figs., 11 plates.

Notes on prehistoric pottery and a bronze pin from Ross Links, Northumberland, by Parker Brewis. *Archaeologia Aeliana* (1928) ser. 4, V, 13–25, 3 figs., 10 plates.

Bronze age burial at Kyloe, Northumberland, by Parker Brewis. Ib. id. pp. 26–9, 2 pls.

Charcoal, a food-vessel, and a jet necklace were found in the cist.

Excavations at Benwell (*Condercum*). Second interim report (1927 and 1928), by James A. Petch. Ib. id. pp. 46–74, 10 figs., plan.

The first report is printed in vol. IV, 135–92.

Margidunum, by Felix Oswald. *Trans. Thoroton Society* (1927) XXXI, 54–84, 5 plates and plan.

Dug-out canoes from Shropshire, by Lily F. Chitty. *Trans. Shropshire Archaeological and Nat. Hist. Society* (1927) ser. 4, XI, 113–33, 3 plates.

Ellesmere (1864), Bagley (1872), Knockin (before 1890), Marton (1908). With short note on dug-outs found in Cheshire and one from Oakley Park, Staffordshire.

Uncommon types of stone implements found in Sussex, by Eliot Curwen. *Sussex Arch. Colls.* (1928) LXIX, 77–91.

Full comparative notes on similar types elsewhere.

The antiquities of Windover Hill [Sussex], by E. Cecil Curwen. Ib. id. pp. 93–101.

Topographical notes illustrated by an air-photograph ; two long barrows, one of them being revealed as such for the first time ; flint-mines ; old roads ; the chalk figure called the Long Man of Wilmington ; Celtic fields covering older ‘ Hallstatt ’ pits.

Maiden Castle in Stainmore, by R. G. Collingwood. *Trans. Cumberland and Westmorland Ant. and Arch. Society* (1927) N.S. XXVII, pp. 170–77.

Pre-Roman remains at Scarborough, by Reginald A. Smith. *Archaeologia* (1927) LXXVII, 179–200, 58 figs., 2 plates.

Much ‘ finger-tip ’ pottery.

SCOTLAND

Recent archaeological research in Scotland, by J. Graham Callander. *Archaeologia* (1927) LXXVII, 87–110, 12 figs., 4 plates.

A stone cist and its contents found at Piekie farm, near Boarhills, Fife, by David Waterston. *Procs. Soc. Antiquaries of Scotland* (1926–7) LXI, 30–44, 10 figs.

Crosses and rock sculptures recently discovered in Wigtownshire, by R. S. G. Anderson. Ib. id. pp. 115–22, 7 figs.

Rock sculptures at Drummoral, Isle of Whithorn.

Underground galleried building at Rennibister, Orkney, by Hugh Marwick. Ib. id. pp. 296–301, 2 figs.

On the bones from graves at Ackergill, Caithness, and an underground building at Rennibister, Orkney. By Thomas H. Bryce. Ib. id. pp. 301–17, 3 figs.

Mr Arthur J. H. Edwards' paper on the excavation of the graves is noticed in ANTIQUITY, II, 384.

A collection of Tardenoisian implements from Berwickshire, by J. Graham Callander. Ib. id. pp. 318–27, 7 figs.

The first comprehensive collection of Scottish microlithic implements, of pre-Neolithic times, received by the National Museum of Antiquities of Scotland. Found on the farm of Dryburgh Mains, Mertoun.

WALES

Gerald of Wales, by F. M. Powicke. *Bulletin of the John Rylands Library, Manchester* (July 1928) XII, 389–410.

Capel Garmon chambered Long Cairn, by W. J. Hemp. *Archaeologia Cambrensis* (1927) LXXXII, 1–43, 19 figs., plan and section.

The cairn is in the chapelry of Capel Garmon and the parish of Llanrwst.

A settlement of the early Iron Age (La Tène I sub-period) on Merthyr Mawr warren, Glamorgan, by Cyril Fox. Ib. id. pp. 44–66, 8 figs., plan and section.

Further excavations at the Graig Lwyd neolithic stone axe factory, Penmaenmawr, by H. G. O. Kendall. Ib. id. pp. 141–6, map.

Supplementary to the paper by Mr S. Hazzledine Warren in vol. LXXVII, 1–32.

Offa's Dyke: a field survey. Second report: Offa's Dyke from Coed Talwrn (Treuddyn parish), Flintshire, to Plas Power park (Bersham parish), Denbighshire, by Cyril Fox. *Archaeologia Cambrensis* (1927) LXXXII, pp. 232–68, 16 figs.

The first report, on the course of the Dyke in north Flint, is in vol. LXXXI, 133–79.

Excavations on the site of the Roman fort at Caerhun: second interim report, 1927, by P. K. Baillie Reynolds. Ib. id. pp. 292–32, 15 figs., and plan.

Excavations of the Powysland Club at the Forden Gaer, by F. N. Pryce and T. Davies Pryce. Ib. id. pp. 333–54, 8 figs., and section.

Work at Forden Gaer has been continued this year—a short report is printed in *The Times*, 30 August, p. 14.

Reviews

PALMYRENA. By Alois Musil. American Geographical Society, Oriental Exploration and Studies, no. 4. New York. 1928.

Musil's new volume gives the results of journeys made in 1908, 1912 and 1915 through the desert country north-east of Damascus. Two-thirds of the book are taken up with the actual account of his travels, the rest is appendices dealing with the geography and history of the Roman and Moslem periods.

As in previous volumes the first part would have been improved by compression ; as it stands it is little more than a transcript of the traveller's diary, sometimes made irksome by the retention of details which while invaluable for map construction etc., are of small interest in themselves; in this case the editing might have been even more severe, because since Musil started on his expedition in 1908 much of the country he traversed has become comparatively familiar ground and his records have no longer the value of novelty. It is hardly fair to disparage, as a recent critic has done, what aims at being a simple and straightforward scientific account because it lacks the romantic flavour of Doughty or Lawrence, but it is true that he covers in part a field which more vivid writers have already made their own and some of his descriptive passages might have been omitted without losing any of the scientific material with which the book abounds.

The appendices are mines of valuable information well presented. In his account of Ar-Resâfa Musil, as is his tendency throughout, makes too little use of the work of his predecessors ; Professor Mendl's reconstruction of the buildings is necessarily based on Musil's notes and views, but one would have welcomed more discussion where the latter differ from those of Guyer and Herzfeld, admirable as the drawings are. In dealing with the geography of Roman Syria Musil contends that Ptolemy's Chalybonitis lay neither round Ḥalbûn, 16 kilometres north-west of Damascus, nor in the Aleppo district, where other commentators have variously placed it, but north-east of Hama, where are the ruins of Ḥelbân which he identifies with Chalybon. There is a good deal to commend this theory but it is not proved. As regards the northern site (where, *pace* Muller, the vine grows freely, as it did in Chalybonitis) one fact is worth noting. Streck would derive Chalybon from Ḫalmân, the old native name of Beroea, and Musil argues that the native name of Beroea (Aleppo) was Chalab, and that the form Ḫalmân is found only in Egyptian and Assyrian sources and as a foreign form would not have persisted for six hundred years after the downfall of the Assyro-Babylonian rule. North-east of Aleppo, where the Baghdad railway crosses the Sajûr, there is a district known as Ḫulmen and marked by the presence of two very large *tells* on the river bank ; this may well be the site of the Ḫalmân of the Egyptian records, and if so one of Musil's arguments falls to the ground, while it might be urged further that the Sajûr district would accord better with the fact that Chalybonitis extended to the Euphrates : but a final solution of the problem must depend on the identification of the other towns mentioned by Ptolemy as lying in the area.

While it is neither the first word nor the last on the wide subject with which it deals, Musil's work is a most valuable contribution to our knowledge of the topography and history of ancient Syria written by one who enjoyed unrivalled opportunities and has taken full advantage of them. C. L. Woolley.

THE AGE OF THE GODS : a Study in the Origins of Culture in prehistoric Europe and the Ancient East. By Christopher Dawson. John Murray. 1928. pp. 466, 3 plates. 18s.

The compilation of an archaeological monograph or handbook involves such an intensive absorption in technical literature and such a concentration on abstractions, that fruitful or illuminating interpretation is virtually impossible ; for that demands not only a concrete imagination but also an acquaintance with the conclusions of cognate disciplines that are likewise buried in technical works. As the author of a dull compilation and specialist essays, I have always hoped that someone with more ample leisure and a wider vision would reassemble the dry bones served up by myself and others and, with the aid of kindred sciences, reanimate the frame of prehistoric humanity. The book before us is the most comprehensive, most erudite, most sane and consequently most successful effort in that direction that I have come across. Mr Dawson has made a heroic endeavour ' to study man's past, not as an inorganic mass of isolated events, but as the manifestation of the growth and mutual interaction of living cultural wholes ', and to present the result as a picture that the layman may read without a glossary.

His book is not in any sense an archaeological treatise ; it contains no account of types of axes, pot-forms or tomb-plans. Yet the author is thoroughly conversant with the archaeological data and with the technical literature. He has by no means confined his attention to compilations but has obviously mastered many of the original publications.

Our author takes as his unit not the ' race ', nor the area, nor yet the culture-cycle of Graebner and Schmidt, but rather the culture defined as ' a common way of life—a specific adjustment of man to his surroundings and his economic needs '. His account of the palaeolithic period is refreshingly brief and focuses attention on the modern representatives of the ancient hunters and the inferences that may justly be drawn from a study of their spiritual life. Thereafter he proceeds to a quite excellent account of the peasant cultures of eastern and central Europe—Lake-dwellers, Danubians, Vase-painters, and Thessalians—wherein he happily emphasizes their importance as the persistent background of all subsequent developments. These cultures, however, he rightly contends, must be understood as emanations from the Ancient East, and so he gives a lucid treatment of the cultural development of Mesopotamia and Egypt. A combination of the oriental sources with inferences from modern survivals then allows a peculiarly vivid appreciation of the religion and spiritual life of the ' neolithic ' peasant peoples. Next comes the megalithic culture whose diffusion is, as usual, ascribed to some sort of prospectors without any exact location of their starting place apart from a very tentative hint of Arabia. Then we are introduced to the Beaker-folk and the Battle-axe peoples ; Dawson identifies the latter with the Aryans and very felicitously shows the positive rôle of the warlike invaders among the peasants. At this point the narrative returns to the ancient East of the New Kingdom and the Hittite Empire and thence back up the Danube to Aunjetitz (Czech Unětice, not ' Unetics ' as here). The Central European and Italian Bronze Age is not very adequately described in twenty-nine pages, whereafter we return to Mycenaean and Heroic Greece and so in the concluding chapter to the Italian Iron Age and Hallstatt.

The total result of this wide survey is a more comprehensive and reliable sketch of the achievement of civilization in the Near East and Europe than has heretofore been offered by any individual author. The standard of accuracy is remarkable high—but the Broken Hill skull is no proof that a type ' closely allied to Neanderthal man ' existed in South Africa, nor was the Latin alphabet derived from the Etruscan.

In general too the emphasis falls on the vital traits. Yet some will certainly object that the differences of what are termed the ' painted pottery cultures ' have been unduly glossed over. Again the pacific character of the archaic civilization has been exaggerated. The oldest historical documents from the Ancient East, from the Gebel el-Arak knife-handle and the Narmer palette to the newly discovered ' standard ' from Ur, give the lie to Dawson's thesis.

It is perhaps more serious that the geographical and climatic background is not kept more vividly before the reader. We get the impression that the climate and hence the flora of the world, outside the Baltic area, were left static after the melting of the glaciers. Yet in the ' Age of the Gods ' man's environment underwent revolutionary changes which perhaps even created the pastoral societies. The nomad cultures of Bedouins and Libyans are not necessarily derived, as is here implied, from hunting stocks who had acquired stray beasts from sedentary peasants. On the contrary recent researches suggest that the nomads of the desert and the predynastic peasants may represent merely different adjustments to desiccation.

A more sustained effort to realize the rugged and terrible environment that primitive man had to face might have enabled the author to recapture more of the romance and magnificence of the achievements of the old men who laid the foundations of our civilization. If he had only faced the Pentland Firth on R.M.S. (*sic*) St. Ola, he would have won a vision of the megalith-builders too deep for cant phrases about ' trade ' or ' maritime intercourse '. ' It is just pedantry ' said Croce, ' to write about the neolithic Ligurians unless you can see the world with their eyes '. And so sometimes both Mr Kipling, who is not a professed archaeologist, or Mr Massingham, whose plight is yet worse, come nearer historical truth than Mr Dawson. Yet he is clearly conscious of the need for concreteness, and it is his greatest merit that with the aid of ethnographic parallels he so frequently transcends the abstractedness of his material. V. GORDON CHILDE.

THE PICTS : their original position in Scotland. By PROFESSOR W. J. WATSON. *Trans. Gaelic Society of Inverness* (1919–22) xxx, 240.

THE QUESTION OF THE PICTS. By PROFESSOR J. FRASER. *Scottish Gaelic Studies* (1928), II, pt. 2, 172.

Who were the Picts ? An immigrant Celtic people, answers Professor Watson, who settled in the Shetlands and Orkney Islands, and from these northern homes extended their power over a large part of the mainland of Scotland.

Who were the Picts ? The question is a foolish one, says Professor Fraser, and betrays a complete misunderstanding of the nature of the problem. It is true that a people known by that name occupied part of Scotland from the third to the ninth century A.D., and were there before the arrival of the Scots or the Britons, but all that can be said in answer to the question who they were is that they do not seem to have differed in any way from the pre-Celtic population of other parts of Britain.

Here is a sharp conflict of opinion, and it adds much to the interest of the debate that both papers are excellent. Crisp and shrewd, each article sets forth its author's arguments with a directness and a lucidity that are admirable, and the two essays together form a useful, even if mutually quarrelsome, contribution to the study of early Scottish history.

Professor Watson's difficulty is that he feels, and many will no doubt share his opinion, that, after all, tradition must count for something. Gildas, Bede, Nennius, to say nothing of the Irish chroniclers, each one of them suggests that the Picts were immigrants—settlers, that is to say, in the far north. Can such testimony reasonably be ignored ? Professor Fraser summarily disposes of Bede, but what are we to say of the sixth century Gildas ? Is it impossible that this erratic and uncertain historian has recorded some surviving tradition of an early movement of the Picts before they were finally settled in Scotland, a memory of some distant prehistoric migration, let us say at the beginning of the Iron Age or even in the Bronze Age ? Such a query is, of course, well-nigh unanswerable, and it is obvious that in any event it would be next to impossible to isolate such a migration upon the archaeological evidence alone. But it is as well to be quite clear on one point, namely that the people afterwards called the Picts most certainly did migrate to Scotland. Not as a single race, perhaps, nor necessarily in a single movement ; but, since it has yet to be shown that neolithic man was evolved in Pictland, it follows that the composite prehistoric civilization found therein, beginning with the neolithic cairns and ending with the much later brochs, was in its origins derived from other lands. The question between Professor Watson and Professor Fraser is not then a controversy as to whether the people subsequently called Picts were originally immigrants, for it is certain that ultimately they must have been so. On the contrary, what is to be decided is the question whether their arrival had anything to do with the movements of the Celtic-speaking peoples.

One of the arguments that has been adduced as showing that the Picts were a non-indogermanic (and therefore non-Celtic) folk depends on their alleged matriarchy as detected in the order of succession of their kings. But Professor Fraser, after examining the genealogies in the Pictish chronicle, rightly observes that there is no real evidence that a matriarchal system did prevail. There is not really any evidence that the Picts preserved a law of succession without parallel among indogermanic peoples. The Leinster kings, for instance, seem to have been familiar with a system of the same kind, and so too were the germanic royalties of early Denmark, if the Frankish chronicles are to be trusted. It almost seems, however, that the chief characteristic of the Pictish law of succession is not so much a system as a lack of system, and, in the absence of a convincing demonstration to the contrary, it may be hazarded that the apparent irregularities can be best explained on the grounds that the chances of a king's son succeeding his father depended more on his age and authority than his degree of relationship. In a word, it is surely impossible to exclude a suspicion that succession may have been partly controlled by the primitive but potent factor of *force majeure*. Thus a supposed matriarchal law of succession is not likely to offer any valuable clue as to the identity of the people called the Picts.

Professor Watson, in dealing with the language of Pictland, decides that the evidence of chief importance is the northernmost tribal names recorded by Ptolemy, that is to say tribal names from the district he considers to be the first Scottish home of the migrant Picts. He remarks that in his opinion these names—Caireni, Cornavii, Lugi, and Smertae (why not add the Decantae ?)—and also the suppositional Orcs of the Orkneys, are Celtic, and he supposes furthermore, that the two Celtic names Orcas, Orcades, were already there in the fourth century B.C., since they come from Pytheas ; whence it follows, on his view, that the Celtic tribe of Orcs was already there. The Picts, then, were tribes with Celtic names and were presumably a Celtic-speaking folk.

Professor Fraser's method of enquiry is different. From a study of placenames in Pictland he concludes that the utmost that may be inferred from the available evidence, so far as the prehistoric period is concerned, is that a non-Celtic and a Celtic language over-lapped in Pictland and that this Celtic language was probably Goidelic.

Now without entering at all into the great dispute as to whether the first Celtic tongue in Pictland was Goidelic or British, we have to ask ourselves whether the people called Picts introduced this tongue, or whether they, speaking a non-Celtic tongue, were in possession of the land when the Celtic tongue was introduced by immigrant Goidels or Britons. The answer to this, if we confine ourselves to the content of these two papers, depends simply on the value to be attached to Professor Watson's arguments from the tribal names. If it could be demonstrated that there were Celtic tribal names in the far north in the fourth century B.C., it would certainly be perverse to insist on calling the Picts pre-Celtic, even though there may have been at the same time a large pre-Celtic element in the population of Pictland. But most historians will surely agree that it is quite impossible to establish the high antiquity of these Celtic names. Nobody can be certain that the Orcs were known by that name to Pytheas, and as for the Ptolemaic names, it is difficult to see how they can be made to prove anything at all. Whether Goidelic- or British-sounding, all we really know is that they were recorded at second- or third-hand by a foreigner long after the initial Celtic migrations into Great Britain. They are therefore totally untrustworthy as an index of the race and language of the people concerned.

The unwelcome fact is that there is no way of advancing with anything like certain steps beyond Professor Fraser's position, and for the Picts of Scotland it looks as though he has said the final word. His answer to the question ' Who were the Picts ? ' is certainly exasperating, and, in the light of the writings of the historians of the last century, it sounds like headlong retreat. But it is the correct answer, and if it is retreat, it is only an act of wise generalship leaving us the stronger, inasmuch as we need worry no more over the defences of an untenable position.

Professor Fraser doubts whether there were Picts in Ireland. But this is simply due to a difficulty over the ways in which the name ' Cruithni ' is used ; for it is generally admitted as likely, in fact as highly probable, that before the Celtic migrations the greater part of the British Isles was inhabited by folk akin in race and language to the Picts of north Scotland. The position in this respect is admirably defined, as is well known, in that bible of the Celtic historians, Professor Eoin MacNeill's *Phases of Irish History*.

As a last comment, it may be observed that the recorded religion of the Picts has no bearing on the problem of their race. Much is heard of their druids and their druidism, and Irish tradition even ascribes to Irish druidism a Pictish origin. But no attention need be paid to this. Even to Gallic druidism was ascribed a British origin, and that is but another instance of the common feeling that ' the other fellow's magic ' or ' over-the-sea magic ' is better and more potent that one's own. Such wholesome respect for a neighbour, since that is all it is, can tell us nothing as to the real origin of the religion concerned, nor, in this instance, can the fact that the Picts had druids prove anything more than that they had in time become accustomed to bestow the favourite Celtic name for a seer upon their own wise men. Indeed, it may even be that many of the Pictish druids were Celts in Pictish service. Broichan, for instance, as Professor Fraser says, may well have been a Briton.

T. D. KENDRICK.

NUMANTIA III ; die Ergebnisse der Ausgrabungen, 1905–12 ; band III, Die Lager des Scipio. pp. 268, and 54 plates in the text-volume ; folio container, with 1 map and 46 plans. Munchen : Bruckmann. 1927. 90 r-m.

Before the events of 1914, our appetites had already been whetted (in the *Archaologischer Anzeiger*, and in the *Journal of Roman Studies*), with the wonders of Roman Republican castrametation, which Dr Adolf Schulten, of Erlangen University, had disclosed at Numantia, in a seven-year campaign. Then the long-promised volumes, stately productions in the modern German style, began to appear. The first two dealt with the native Celtiberian aspect of Numantia ; now come the volumes dealing with the Roman side of the tragedy. The third volume is under present consideration, and the fourth is promised soon.

The introduction is long, and in German fashion aims at a reconstruction of the whole historical and psychological background. In this case the treatment is admittedly worth while. Guided by Dr Schulten, we pass up the Douro towards Numantia, late in 134 B.C., and consider why Scipio chose to beleaguer rather than to assault. From a consideration of the Classics in general, rather than of Scipio's affairs, the answer given is economy in man-power, and the gruff principle of Corbulo, *dolabra hostem vincendum esse.* Two temporary camps are built ; and thence is directed the building of a great circumvallation with seven fortlets. Two of the seven are legionary encampments, the G.H.Q. of Scipio and Fabius Maximus. These are Castillejo and Peña Redonda, lying one at each end of the long axis of the great irregular oval (constructed to suit contours), and in sight of one another for signalling purposes. The whole circumvallation was 9000 metres long, and would seem to have taken not more than two to three weeks to construct, to judge from the useful group of analogies quoted. The force involved was some 20,000 legionaries (Roman and Italic) and 40,000 auxiliaries, consisting of light infantry, archers and slingers. Much artillery was also used, but the number of machines is unknown, and the attempt made to estimate them, though reinforced by much interesting external (some might say irrelevant) material, is not convincing. Twelve elephants complete the force, and are useful in frightening Iberic light cavalry.

The disposition of the force next claims attention. The garrison of the circumvallation was 30,000, of which 10,000 was considered as reserve ; in short, 4,300 to each of the seven camps. Valuable details are preserved by Appian about the signalling : a simple affair of flags by day and torches by night, arranged in the towers, with trumpets as well. These served for generalities, messengers for details ; and the messages passed from post to post by word of mouth, or were taken direct by special messengers. This is a passage useful to students of our own frontiers, for the Roman was conservative ; or, as Schulten remarks, '*soll man es konservativ oder borniert nennen* ? ' !

Finally, follows an estimation of the inhabitants of Numantia, some 8000 ; and reflections, not without interest for the student of Roman thought, upon the effect of Stoicism on the Roman character, giving it two sides, merciful and hard ; though, to be sure, the hard usually won in war. Hence the fate of Numantia, and the sparing of lesser communities. Stoicism succeeded no better in 133 B.C. than Christianity in 1914 A.D. The way is now prepared for a description of the actual remains. Of the circumvallation, 1680 metres (divided among different parts of the circuit) were dealt with out of the original 9000. It was built as a composite rampart, consisting of two retaining walls, packed with stones and earth between. The width varied from 6 metres to 2.40 metres (Appian's dimension), with an average of 4 metres [retaining wall, 0.40m.]. The height given by Appian, 3 metres exclusive of breastwork, is accepted. At every 100 feet were towers, 5 metres by 4.5 metres, sometimes on the line of the wall, sometimes immediately behind it. A special bridge, resembling in plan the Tyne-bridge at Chesters on Hadrian's Wall, crossed the Douro. Appian says that there was also a ditch ; but the ground was rocky, and no ditch was found, in spite of the fact that it appears on a restored section, in order to make the agreement with Appian more precise.

The two main camps are then described, for the others were never fully dealt with, and are in bad condition. Peña Redonda is the best preserved. It is an irregular oval of astonishing shape ; only Raedykes, and Cawthorn central camp correspond to it in any way in Britain. The rampart resembles the wall of circumvallation. The east gate has a *titulus*; the north two towers, and a natural ridge of rock guards it, in the manner of a *clavicula*. There is no ditch, although Schulten believes it to have been allowed for in gromatic measurements. On the north-east a simple breastwork takes the place of a heavy rampart, for contours are sharp ; and the same thing presumably happened on the north-west. This is much the same as at Raedykes, where contours also dictated two types of treatment. Then come internal buildings : short barracks for the cavalry, long ones for the legionaries, a mixture of the two for the allies ; tribunes' houses, *praetorium*, *forum*, *quaestorium*, and *tribuna* (the last three perhaps less certain). The superimposed gromatic grid plan gives it all remarkable symmetry, and may express the ideal form, as it certainly fits the general state of affairs. But the buildings will wander. This, however, is not serious. On the other hand, it is a matter for pointed comment that the buildings themselves do not fit the ideal forms which are given to them individually. Sheet XIV–XV (cavalry barracks) fairly illustrates this. The buildings in question are sufficiently alike to show that they had the same general purpose. Then why go further, and, like a Formal Logician at play with the syllogism, give us a ' formal ' barrack, which has nothing to do with realities, and then call this a ' reconstruction ' ? The remains themselves are so important, and so well planned in detail, thanks to Dr Fr. Schmidt, that they will stand for themselves well enough. Again, while these ' reconstructions ' are formal, they are far from ideal. Nothing will excuse the ' restored ' *praetorium*. It is shockingly drawn, exhibits no more Roman feeling than the *praetorium* at Saalburg, and has no relation to the facts, as anyone can see who compares the restoration with the plans.

Of the greatest interest is also Castillejo. Two camps, distinguished by their different levels, orientation and technique, lay there before Scipio placed a third on top of them. Their buildings reflect the same conditions as those of Peña Redonda, and it is impossible to consider them here in detail. But their exposition has the same faults. Scipio's camp provided a most interesting *praetorium*, and still more interesting granaries, all of which forestall, in a way which delights the student of Roman military affairs, early Imperial forms. But, once more, what reconstructions ! Here a splendid chance has been lost. For reconstructions, sketches though they be, are the one way of making the remains of Numantia intelligible to the public, general and scholastic, and this is the official publication of the site. Where else, if not here, should adequate reconstructions be made ?

In view of what has just been said there is no need to criticize the plans in detail. The actual-state plans are excellent—a credit to the excavator, and to Dr Schmidt who made them. The restorations are, in every respect, not worth the paper on which they are drawn. The general maps, productions of General von Lammerer, are beyond praise : for they permit the reader, by means of colour, to appreciate at a glance the whole disposition of an extremely complicated site. If a comment might be made, one rather wishes that the three-period colouring of Castillejo had been carried on to the general plan thereof, for it would thus have been clearer. But these are counsels of perfection. Yet a word should be added about the illustrations in the text. Here the photographs are in general good, if on the small side. But plates II.2, V.6, XI.4, and XVIII.2, are out of focus. The technique of XII.3, and XXV.3, which are drawings, is bad, and contrasts sharply with that of plates XXXIV–XLVII and LIV.1, which come from von Groller's skilled pen.

'Vagliami il lungo studio ed il grande amore', exclaims Schulten at the end of his preface. That is a cry which every serious archaeologist can echo, and here we can gratify the author's wish. It is not easy, to those who have not done the like, to realize the toil and strain of seven years on a site like Numantia. Much knowledge has been gained that will be of permanent worth. We are supplied with a vivid and truthful commentary upon the siege of Numantia, which enables us to visualize every important detail thereof. That alone is no mean triumph. But there is also so much that is valuable in implication. Now we know, as never before, from actual facts, just what work could be got out of a Republican army in the field by a competent general. Things like Pompey's camp at Dyrrachium become much more credible. We realize, too, that many features of Imperial fortresses go back a long way; the standard barracks, granaries, *praetoria*, tribunes' houses, are all there. Moreover, Dr Schulten claims Scipio as an innovator in some of these things; and everyone will await with the greatest interest his account in volume IV of the five camps of Renieblas, and those of Almazan and Aguilar, which are expected to substantiate these claims. But there is another side to the picture. The remains of Numantia were in no way spectacular, and they produced no spectacular find. Objects were poor; structural remains badly preserved; the forms of many buildings pitifully inconclusive. The work must often have seemed tantalizingly unproductive, desperately difficult to interpret. It obviously required the greatest tenacity of purpose, the keenest enthusiasm, to carry the work through to the end, and to deal with the interpretation of the remains as they appeared. If it has been necessary to raise firmly the question of the reconstructions, it has been done with the feeling that, where all else is so good, Dr Schulten has not been well served in this matter; and it is our earnest hope that he, who must have so much material to give by personal contact, will be better served in future. The importance of the sites in the Numantian district is so great for the history of Roman castrametation, that no effort should be spared in making them intelligible on the side of interpretation. In other archaeological respects Professor Schulten is to be congratulated so warmly, that one hopes there may be opportunity yet to congratulate him in this. This volume, and even more, we believe, the volume which is to follow, should be in the hands of every student of Roman fortification. I. A. RICHMOND.

THE BRITISH SCHOOL OF ARCHAEOLOGY IN JERUSALEM: Bulletins 1–7 (1922–5); SUPPLEMENTARY PAPERS: Origin of the Plan of the Dome of the Rock. By K. A. C. CRESWELL (1924); INDEX OF HITTITE GEOGRAPHICAL NAMES (1925). By L. A. MAYER and J. GARSTANG. London: 2 Hinde Street.

The British archaeologist has no reason to be proud of his Government which can afford to squander thousands of pounds upon objects which appeal only to the more animal side of human nature while it cannot spare even a small pittance for the needs of the historical sciences. Even the £500 a year which was granted to the British School in Jerusalem after our acceptance of the mandate for Palestine has been withdrawn and it is doubtful, therefore, whether the School can continue to exist. There might possibly have been some excuse for the governmental policy in regard to science in the days when taxation was light and the bulk of the wealth of the country was in the hands of a specially educated class, but such an excuse is no longer applicable to an age of socialistic democracy. The archaeologist not unfrequently wishes that he lived under the more enlightened Governments of France or Italy.

During the short period of its existence the British School in Jerusalem has managed to do a considerable amount of good work. Apart from excavation and archaeological exploration it has produced some excellent publications, among which Col. Creswell's monograph on the Origin of the Plan of the Dome of the Rock is especially prominent. The few Bulletins, moreover, which it has been able to issue, are full of important matter. The reports of the excavations at Ascalon, Tanturah and Jerash are more particularly valuable ; so also is the account of Mr Turville-Petre's discoveries in the palaeolithic caves of Tabgha on the Sea of Galilee, while the architect will be interested in Mr Horsfield's work at Jerash. In the careful description and dating of the Palestinian pottery we may see the hand of Mr Phythian-Adams, who has also contributed an interesting article on the Philistines from an archaeological point of view. In fact, a study both of the text and of the illustrations of the articles relating to the pottery will be found indispensable to the future excavator in Palestine.

An important contribution is that on the geography of the Plain of Acre, one result of which has been the discovery of the site of Hazor and the initial excavation of the site by Professor Garstang. Of special interest to myself is the monograph on the geographical names found in the Hittite cuneiform texts. It is a most useful compilation, and though we may disagree with some of the identifications, more or less tentatively suggested, the materials for forming a conclusion have been brought together for the first time and methodically arranged. As for the objection that the Hittite sphere was in Asia Minor and not in Palestine we are becoming increasingly aware that the Hittites were an element of primary importance in pre-Israelitish Palestine, and that the history and ethnology of the country cannot be understood without a knowledge of them. As the book of Genesis states, Heth was the second son of Canaan. A. H. SAYCE.

BOUWSTOFFEN VOOR DE GRONINGSCHE OERGESCHIEDENIS. Door Dr A. E. VAN GIFFEN. Overdruk uit Verslag van het Museum van Oudheden te Groningen, 1928.

This booklet contains an account (in Dutch) of recent discoveries and excavations in Holland by the author.

At Wessinghuizen three grave-mounds with internal timber constructions, and an urn-field in their immediate vicinity were excavated. It will be remembered that Dr Van Giffen investigated and published the account of the interesting and important timbered mound at Harendermolen near Groningen. (*Praehistorische Zeitschrift* xv, 1924). The three mounds now recorded at Wessinghuizen are an addition to our knowledge of these mounds with internal structures of timber. The best known example of the kind so far found in Britain is that at Bleasdale in Lancashire (see ANTIQUITY, I, 228). In mound no. 1 at Wessinghuizen, a central grave that had contained a burial by inhumation was found surrounded by a roughly circular double ring of post-holes ; these two rings were placed only about half a metre apart, the spacing between the holes being about the same distance. Outside these two rings, but still under the covering of the mound, was a third ring of larger post-holes fairly regularly spaced from two to three metres apart. The diameter of this outer ring was about twelve metres, and of the innermost of the double ring about eight metres. Dr Van Giffen believes that the posts originally reached above the top of the mound.

In mound no. II, the timber construction was apparently very similar to that of no. I, but of rather smaller dimensions ; in this case the central primary grave had been previously disturbed. In mound no. III, the wooden construction differed somewhat from that of the two other mounds, and as the primary burial was after cremation it may be somewhat later in date ; the primary burial was found on the floor level, not sunk in a grave as in the two first instances, near the centre of the mound, and surrounded by concentric rings of post-holes. The holes were all of about the same size, placed closely together, but varying in number in different parts of the ring ; on the east side there were as many as six holes placed one behind the other, while on the west there were four, and on the north only three. The outer diameter of this ring of holes was from ten to eleven metres, and that of its inner edge eight to nine metres. All the three mounds had been made by piling up first turf and then sand on top of it.

Encroaching on mound no. II an urn-field was found, and another of a similar character a little west of no. I. The urn-field consisted of a number of burial places surrounded by trenches or small ditches, some round, some oval, and others of key-hole or hand-mirror shape (*sleutelgat of hand spiegel*) ; the burials were after cremation and placed near the centres of the little enclosures, either in urns, cloth, or merely collected into little heaps ; these seem to have been covered over originally by the material dug from the enclosing ditches, so that they would have appeared as little trenched mounds. The diameters of the circles varied from about five metres to about two metres. The character of the pottery dated these urn-fields to the last century or two before our era. A cemetery of the Carlovingian period at Onnen near Harendermolen was also examined. An early Bronze Age skeleton burial with a beaker was found among these graves ; the burial seems to have been made in a sort of wooden shelter or hut within a pit-dwelling sunk into the ground, and a reconstruction of this is shown. The various sites and discoveries are well and clearly illustrated with plans and excellent photographs.

M. E. CUNNINGTON.

ETRURIA ANTICA. Second edition. By PERICLE DUCATI. Turin: G. B. Paravia. 1927. 2 vols. pp. 178, 203, and 25 plates, 1 map. 24 lire.

A GUIDE TO ETRUSCAN ANTIQUITIES. By G. BUONAMICI and A. NEPPI MODONA. Florence, etc. Ente per le attività Toscane. 1928. pp. 124 and 38 illustrations (on 32 plates), 1 map. 7 lire.

The first of these two books is the second edition of Ducati's work, reviewed most favourably (as it deserved to be) by MacIver in the *Journal of Roman Studies* (1925) XV, 118–19. It is certainly a masterly little treatise, very well and freshly written, and this edition has been modified by the author in accordance with the results achieved by research and criticism. Thus he extends the fourth phase of the Villanovan culture at Bologna (the so-called Arnoaldi period) to the 7th as well as the 6th century B.C., though he still maintains his views as to the relatively late date of Vetulonia. The illustrations are excellent and the price is extremely moderate.

The same remark applies also to the second book, which originally appeared in Italian, and was briefly noticed by E. S. in the *Journal of Roman Studies* (1926) XVI, 278.

The ground covered is, of course, very much the same, but the discussion of the various problems is much briefer and therefore more objective. While Ducati agrees with MacIver in accepting the Asiatic origin of the Etruscans, the authors of the *Guide* adopt a more non-committal attitude. In the comparatively long section devoted to the Etruscan language, however, they seem slightly more inclined than Ducati to rely solely on the combinative method, which explains the Etruscan language through itself, and less inclined to accept the conclusions of a philologist like Trombetti, who relies upon comparisons with other languages—sometimes it would seem without taking sufficient care that the comparisons are made between languages in the same stage of development and at the same or corresponding periods.*

The topographical tourist guide with which the smaller book opens is more useful from the practical point of view than the similar section in Ducati, though in both cases those who actually wish to visit the sites will do well to provide themselves with something more than the excellent maps (1 : 250,000) of the Touring Club Italiano which are referred to in each case. I should not be inclined to envy anyone who tried to find, say, the remains of the Etruscan Artena, of Castel Cardinale (Musarna), or of Civitucola (Capena), all of which I have visited, without either a guide or a map on a considerably larger scale.

Nor is the fact that tombs have been discovered even in large numbers a guarantee that there is anything to be seen there now. I certainly would not recommend a visit to Capena (nor to other sites such as Morlupo or Riano) for that reason only.

And why is only one Etruscan bridge mentioned at Bieda, whereas there are two, both of them Roman, as I think has been clearly shown by Koch in *Röm. Mitt.* (1915) xxx, 175–80? And is there any real reason for seeing anything Etruscan in the theatre at Ferento, as the authors of the *Guide* do (Ducati wisely omits it)? T. ASHBY.

THE ETRUSCANS. By D. RANDALL-MACIVER. Oxford University Press. 1927. pp. iv, 152, and 14 illustrations, 1 map. 6s.

This is another excellent little book by a master in his subject, but written in an even more popular way. As an introduction to a difficult but fascinating subject, which is now, owing to the activities of the newly established permanent committee for the study of Etruscan antiquities in Florence, coming into considerable prominence (see ANTIQUITY, II, 250), it is the only up to date work in English; and its admirable lucidity and sobriety of judgment may commend it to readers of all classes and countries. The author's two monumental works, also published at the Clarendon Press, *Villanovans and Early Etruscans* (1924) and *The Iron Age in Italy* (1927) will naturally be consulted by those who desire further details and further information; for in this little book there are no references, and no bibliography. We may fairly apply to it the praise which he himself bestowed on Ducati's work: 'He is never for a moment dull or pedantic, but even in the most technical places wears his erudition with an attractive grace'. T. ASHBY.

STUDI ETRUSCHI. Vol. II. Comitato Permanente per l'Etruria. Florence. 1928. pp. 798, and 60 plates. 180 lire.

The second volume of this fine series† which appeared before the Congress of

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* A. Trombetti's *La Lingua Etrusca* is reviewed in ANTIQUITY, II, 378–80.

† Volume I is reviewed ib. id. p. 250.

Etruscan Studies of last April was over (see ANTIQUITY, II, 337) contains, like its predecessor, a number of interesting articles. It begins with a short paper by Von Duhn, in which he maintains that the she-wolf which Dante saw on his first entrance to the Inferno, and which he describes in far greater detail and with far greater liveliness than the panther and the lion which he met just before, is a recollection of the Capitoline wolf. In his time the statue, without the figures of the twins, stood high up on the front of the Lateran palace, at the place of execution ; and the terror which it inspired is well represented in his description.

Next, MacIver, in a brief paper which is a summary of chapter 7 of his *Etruscans*, maintains the independence of Etruscan art before the 6th century B.C., in what seems to be a perfectly convincing manner, only admitting Greek predominance even after that period in the minor arts and in painting, and not in sculpture and architecture.

Other articles on isolated works of art follow, and then comes one by Gabrici on the Casuccini collection in the museum at Palermo. It was formed of objects found at Chiusi in 1829–62, was purchased by the Government in 1865, and, by a rather unfortunate decision, sent to Palermo. As it has never been catalogued (an enterprise which will be difficult, owing to the lack of exact indications of provenance), or even properly examined, Gabrici's notes and illustrations on some of the more important pieces are welcome. Unfortunately some of them have been badly restored by inexpert hands. Some of the stone *cippi*, in the base of which was a cavity for the urn containing ashes, are especially interesting.

Two articles on the Tomba del Cardinale at Tarquinia follow, the first of which is translated from Van Essen's *Studies in Etruscan Tomb Paintings*, but it is to be noted that the author now brings down the date from 230 B.C. to 120 B.C. As the paintings are too much damaged to be photographed we are thrown back on the drawings of Byres, made about 1780.

The objects discovered in the tomb of the family of the Calini Sepus, excavated at Monteriggioni, near Siena, in 1893–1901, are catalogued in detail by Bianchi Bandinelli ; they belong to the 3rd–1st centuries B.C.

A more important paper is that of Dragendorff, who has identified a representation of a *haruspex* (a surprisingly rare subject) on an Aretine base.

In the linguistic section which follows there is a long article by Goldman on two Etruscan roots : *aru* (day) and *nac* (night) ; a shorter paper in which Devoto takes instances of Greek words which have passed into Latin through Etruscan, *e.g.* Hercules through the form Herclo ; an article by Buonamici on the inscription of the hypogeum of S. Manno near Perugia : it is a rectangular vaulted chamber very finely built in stone, with a niche in each side. The inscription (following Torp and Corssen) he translates : ' May Saucus grant a place of repose here for the souls in this family tomb built for Aulus and Lars, of the family of Precu, sons of Lars and of Cestnei. The family of Precu has ordered that the ossuaries and urns shall be placed here, and domestic supplications and double offerings made '.

The naturalistic section contains a long paper by Bonacelli on *Nature and the Etruscans*, summarizing our knowledge from ancient authors of the flora and the natural features of the country. The question as to the share that malaria had in the decline of Etruria, as in that of the rest of Italy, cannot be said to be as yet solved, as Fraccaro's paper in this same volume reminds us.

The *Notiziario* contains a number of interesting items which cannot be particularized here, but one important article must be mentioned, in which, after a detailed study of the names of localities in the upper Adige valley, Battisti concludes that there is no evidence to be got from them in favour of the theory that the Etruscans came to Italy by land, but quite the contrary. Pareti, in his *Origini Etrusche*, was more than once misled by lack of local knowledge ; and even Ducati (*Etruria Antica*, I, 32) admits ‘ undeniably Etruscan characteristics ’ in the local nomenclature of the Raetian valleys.

Altogether the volume is an important production, and reflects great credit on the enterprising Committee for Etruscan Studies. T. Ashby.

LA LIBIA NELLA STORIA E NEI VIAGGIATORI. By Arcangelo Ghisleri. Turin: G. B. Paravia & Co. 1928. pp. viii, 171, and 5 plates. 17.50 lire.

This is a short summary of the sources of our knowledge of what is now North Africa, from ancient times to the Italian occupation, by an author who had before the war (in 1912) published the third edition, which appears to be out of print, of a general and profusely illustrated work on Tripolitania and Cyrenaica. Unfortunately the descriptions of them by classical authors are given only in Italian translations, and sometimes without precise references. Nor is a single ancient inscription cited.

A considerable amount of space is devoted to the journey of Della Cella, but the frequent criticisms of his work by the brothers Beechey are entirely ignored. Nor does our author seem to be clear as to the use of the Asnàm (the plural of Senàm) which Bartoccini* had already followed De Mathuisieulx in describing as oil presses of the Roman period. There is no attempt to describe the recent Italian excavations, though a few rather antiquated photographs of them (*e.g.* of the thermae at Leptis in 1910 !) are given. Nor does the author's own previous work seem to have been the result of independent exploration, inasmuch as it is not cited in Attilio Mori's *Esplorazione geografica della Libia*, a complete account of the investigations which travellers have carried on there from the beginning of the 19th century up to 1923. This was published in 1927 by the Ufficio Studi of the Government of Cyrenaica, and is, for the period with which it deals, in every respect to be preferred to Ghisleri's book. T. Ashby.

DALLA PIANURA DI ADALIA ALLA VALLE DEL MEANDRO : impressioni di viaggio. By Biagio Pace. Milan. Casa Editrice ‘ Alpes ’. 1927. pp. 312, and 81 plates. 20 lire.

The impressions which our author records in these pages are rather political than archaeological, and have to a considerable extent been published as such ; while Professor Pace has already recorded the archaeological results of his journey in the *Annual of the Italian School* at Athens ; and the photographs, many of which have appeared there, will be found of very great interest.

He does not, it will be interesting to note, share the unreasoning tenderness for Turkey, and blind hatred of Greece, which some of his countrymen have displayed in the past, and which have certainly helped to lead Italy astray in Asia Minor, whatever blame (and according to our author it is a good deal) may fairly attach to her allies. T. Ashby.

THE LETTERS OF GERTRUDE BELL. Selected and edited by Lady Bell. Ernest Benn. 1927. 2 vols. pp. 791. 42s.

This is in no sense an archaeological book, but it is one which cannot fail to appeal to archaeologists and to all those interested in the Near East. Gertrude Bell's contributions to science, her work on the palace of Ukhaidir—which she was the first to plan and study, her work on the *Thousand and One Churches* done in collaboration with Sir William Ramsay, and the accounts of her travels in the Syrian and Arabian deserts with all her observations on the antiquities encountered there have been published elsewhere, and the references to them in these volumes add but little to our positive knowledge. Here we have the record of a full and busy life wherein archaeology, though it was always a passion with her, was but one of many pursuits not less absorbing ; the picture that it gives of Gertrude Bell may enable us to apprize better the value of her work in one particular field, but its interest is wider than that.

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* *Le Antichita della Tripolitania.* Milan, 1926.

Here was indeed an extraordinary personality. She was brimful of enthusiasm in whatever she undertook and she possessed a physical energy and powers of endurance to match ; the stories of her Alpine feats only bring into prominence in a dramatic form qualities which in fact informed all her work alike. She had an amazing gift for assimilating knowledge, as witness the facility with which she mastered languages, picking up at least the rudiments of Hindustani and Japanese while on her way out to India and Japan, acquiring almost without effort a very real knowledge of Persian, and becoming a good Arabic scholar as an introduction to and in the course of her desert wanderings : but she was not deceived by superficial talent and, herself an indefatigable worker, reserved her admiration for the more detailed and more laborious forms of research. It was this that made her judge so fairly her own limitations ; on a subject in which she was well grounded she would speak with conscious authority ; where she felt herself perhaps equally interested but less competent she was delighted to learn and never ashamed to employ the help of others, and her letters shew how generous she was in appreciating whatever was done for her. Most clearly of all does the book illustrate her intense and ready sympathy with people. It was this quality which gave such value and fascination to her records of travel, that flung her whole-heartedly into the cause of Arab independence, that made ' *al Hatoun* ' second only to ' Cokkus ' in the estimation of the Iraqis, and yet kept her, in the midst of labours such as would have engrossed most people completely, as keenly interested in the thoughts and doings of her friends at home as if she had nothing else to care about. Indeed if anything obscured her clarity of judgment it was this genius for friendship, but perhaps on this point her published letters are somewhat misleading ; where they deal with the politics of the Near East they have been rigorously edited, not to say censored, and a wider selection might have shown that her views were less coloured by personal values than here seems to be the case. Certainly as a record of the development of Iraq the letters suffer from the suppression of much on which her strong sympathies and trenchant expression would have thrown light, but it is only fair to remember that the book makes no claim to be such a record and at most reflects the part played in those events by Gertrude Bell. Actually, in proportion as the forms of settled government supplanted the personal direction of affairs characteristic of the earlier days, her political duties became more a matter of routine, no longer filling all her time or satisfying all her enthusiasm, and by turning again to archaeology she was able to do pioneer work of more permanent value than any now devolving on her political office. Undertaking the post of Honorary Director of Antiquities, she drew up, after consultation with many archaeologists, and in the face of considerable opposition on the part of Iraqi officials as bigotted as they were ignorant, a scheme of law which should at once protect the interests of Iraq and encourage the activities of foreign institutions, and she then proceeded to form a department and a museum. The prospect was not encouraging, she had no staff and no funds; characteristically she raised helpers from all sides, infecting with something of her own enthusiasm Iraqi ministers and British officials of other departments, who might unexpectedly find themselves acting as archaeological inspectors or as assistants in the little museum housed in a single room of the Government Serai. Her greatest achievement was in March 1926, when she persuaded the Government to hand over for a permanent museum one of the best buildings in Baghdad and to allocate a substantial grant for its equipment; considering how hard pressed the Government was for funds and how many public services were demanding money for more material objects this was a triumph indeed and her pride in it was more than justified. Into the task of preparing the museum and installing the already considerable collections she threw herself with an energy which was too much for a strength undermined by the constant strain of work and by the heat of summers spent in Baghdad; she had been urged to leave and had refused—' it isn't merely a responsibility to the Iraq but to archaeology in general ', and her death on 12 July 1926 was a real sacrifice of herself to science.

These later letters bring out one point of which those of us who worked with her had every reason to be sensible: intent as she was to further the interests of the country she loved so well and to develop the museum which was her creation, she preserved a long view and put always the cause of ' archaeology in general ' above local and immediate advantage. While then the Baghdad museum, already enriched beyond her dreams, is her most obvious material monument, it does not represent her greatest service: the policy which she initiated and liberally interpreted of encouraging scientific exploration in Iraq has put a wider world in her debt. C. L. WOOLLEY.

THE SCOTS MERCAT ' CROSS '. By WILLIAM GEORGE BLACK, F.S.A. Glasgow: Wm. Hodge and Co. 1928. pp. 36, and 6 plates. 2s. 6d.

Mr Black has succeeded in producing in a convenient form a very readable and instructive addition to the existing knowledge of those monuments dear to the heart of a Scotsman which go by the name of Mercat Crosses, although, as the author points out, the addition of a cross as such to the original stone pillar in these monuments may be considered generally to have been a matter of by no means primary importance. The work in question is divided chiefly into a historical survey of the Mercat Cross of Glasgow and an essay on similar crosses in general. To this is added an appendix consisting of notes from the *Old Statistical Account of Scotland* and other sources dealing with various monuments taken by the author possibly to refer to crosses, but which do not in all cases do so. For example, the cases taken from Aberdeenshire cannot, with the possible exception of that from Monymusk, come within this category. The Drumstone, for instance, on the farm of Upper Auquhorsk (not ' Auguhorsk ' as stated) is a natural rock of asymmetrical form, while the Gouch Stone at Dyce has never to the writer's knowledge been suggested hitherto as having any connexion with a Mercat Cross. These are very minor criticisms, however, and doubtless Mr Black is justified by his own contention that ' it is far better to be over-generous than niggardly ' in including monuments which are not crosses in preference to omitting those which are.

In the many references to the various uses to which these monuments were put in past days there is one which might perhaps be added, since it has always struck the writer as being one of the most remarkable, to wit, the record that the Mercat Cross of Aberdeen was the chosen meeting-place of the local Witchcraft Coven in 1596. One would have thought that a less appropriate venue could hardly have been selected.

There is no index to the book, but such perhaps is hardly necessary. The illustrations are one and all excellent.
ALEX. KEILLER.

THE CHEAPSIDE HOARD OF ELIZABETHAN AND JACOBEAN JEWELLERY.

By R. E. MORTIMER WHEELER. London Museum Catalogues, no. 2. 1928. 1s.

The City of London has provided many surprises during the varied excavations so continually taking place in its streets, but few can compare with the discovery in Cheapside in 1912, of what may, with reasonable certainty, be described as portion of the stock in trade of a 17th century jeweller, money lender, or both—which for the most part is now preserved in the London Museum. Dr Mortimer Wheeler has presented the details of this discovery in a very readable and excellently illustrated pamphlet, which forms the second* of what promises to be a remarkable series of booklets on the contents of the Museum.

To begin with, the collection is widely assorted ; it contains articles of all kinds from a priceless watch enclosed in an emerald of fine quality and enriched with enamel, to a little strawberry leaf in bloodstone, dainty enough, but of no great intrinsic value. Between these two extremes lies the largest collection of goldsmith's work yet found together in Great Britain, not only in mere bulk, but also in the range of objects which it presents.

For the most part these objects are of moderate value, which at once suggests the conclusion that they formed the stock of a jeweller, who might well be expected to ply his calling in Cheapside. They are the jewels, not of a court lady, but rather of the merchant's wife of Elizabethan or Jacobean days, for the details of the jewels and the workmanship all point to a date soon after the year 1600. Moreover the craftsmanship and mounting are English in character, although in certain cases Italian influence is quite evident. A certain number of antique gems have been remounted in 16th or 17th century settings. These alone exemplify the spirit of the Renaissance, with its revival of a classical atmosphere.

Much too must be said for the reticence of the craftsman in his use of the precious stones at his disposal, and for his judicious use of enamel to enhance their colourings. The chains of stones, broken by enamelled links of roses and daisies, are most happy and have an English feeling about them, which differentiates them from the Italian *jardinetti* of the same period. Indeed the simplicity of the designs is striking in a period which was, in dress and appointments, so very elaborate, extravagant and artificial.

But beyond the actual jewels and craftsmanship there arises yet another interesting side light in the source from which the actual materials have come ; emeralds from South America, cat's eyes and spinels from Ceylon, rubies from Burmah, diamonds from India, turquoise from Persia, opals from Hungary, all suggesting a wide range and a distinctly expansive commerce for the early years of the 17th century.

Still more interesting is the cutting, which must be European, for Orientals were never clever at this, being afraid to sacrifice the stone sufficiently to secure brilliance. Some are ' cabochon ', oval or square, some ' table ' cut with extreme discretion. These perhaps do not call for much comment, but the ' rose ' cutting comes almost as a revelation at so early a date, and so too is the ' star ' cutting of A 16551, a pendant in crystals which in its lowest stone actually shows ' briolette ' or ' double rose ' cutting. The only cutting not represented is the ‘ brilliant ’, which does not seem to have been generally recognized until the end of the 17th century.

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* The first was reviewed in ANTIQUITY, II, 106.—ED.

Doubtless many of the gems were amuletic, following the accepted custom of an age which ascribed virtues to individual stones, and indeed to fossils as well. Among the loose stones in the hoard the writer comments on the curious presence of several fossilized fish teeth (*Lepidotus maximus*). These teeth were commonly known as ‘ toadstones ’ and were reputed to come from the head of that reptile. They were esteemed to be singularly efficacious against witchcraft, and were quite commonly set in rings ; so that their presence in a jeweller’s stock is not after all unusual. A similar idea is found in the ring A 14243, which has a cameo of a toad cut in chalcedony.

The writer has much that is illuminating to say as to the date of the hoard, by no means an easy matter owing to its very varied constituents, representing many dates. Two 17th century rings, for example, are set with Roman intaglios. An unset intaglio is of Romano-Egyptian origin. A cameo of Queen Elizabeth dates itself, and the two watches belong to the same reign. The grape-cluster hair ornaments must certainly be earlier than the reign of Charles I. So that on the whole the year 1600 seems to be a conservative estimate.

How came it that such a store of valuables was lost ? Here only guesses can supply an answer. The box which contained them might have been hidden during the Civil War, or more possibly during one of the Plague years, when merchants deserted the city, or again it may have been hidden at the time of the Great Fire and forgotten in a hasty exodus. The most likely of these guesses is that of a plague-deserted house, since there was a specially virulent outbreak of plague in London in 1603, which coincides sufficiently with the date suggested for the hoard. FRANK STEVENS.

THE CHANCELADE SKULL. By PROF. W. J. SOLLAS, SC.D., F.R.S. Journal Royal Anthropological Institute (1927) LVII, 89–122.

This important paper, which has given rise to a good deal of discussion and controversy among anthropologists, is also of interest to antiquaries and archaeologists, since its object is to review the arguments upon which are based the claim that the modern Eskimo are the descendants of the Chancelade race ; a race which inhabited southern Europe during Magdalenian times.

Professor Sollas quotes Testut, the first describer of the skull, very fully, and shows how careful the description of the latter is ; but a good deal of work has been done of late years on the Eskimo skull and several characteristics brought to light which were unrecognized in Testut’s day, and it is these that Sollas has collected for us and has compared with his own careful revision of the original Chancelade skull.

No one who has worked at Eskimo skulls could fail to be impressed by the likeness which they bear to the Chancelade, but, of course, it is arguable that this general likeness might be caused by a similar environment rather than by heredity ; and, indeed, when we come to examine the skulls very closely, there are points in which the Chancelade is unlike any Eskimo. Sir Arthur Keith has pointed out some of these ; but, to my mind, the most serious difference is the fact that in the Chancelade skull the sagittal and lambdoid sutures are very complex, while in the Eskimo one of the most characteristic features is the great simplicity of both these sutures.

When we come to points of resemblance, there are so many and they are so faithfully reproduced, that their cumulative effect is overwhelming. Probably the readers of

ANTIQUITY will not thank me for going overmuch into anatomical detail ; but here, in both groups, a suture is straightened out in an identical way, a way never seen in other skulls ; there, a usually sinuous border is planed off as though by a tool ; here, an unusual mass of bone is collected, without any reason that we can see, below the opening of the ear hole ; and there, a curious little pit occurs in the base of the skull, close to the opening of the Eustachian tube, which I think is reproduced in the available model of the Chancelade skull. The most unsatisfactory thing is that Sir Arthur Keith, with his vast experience of skulls, is not convinced ; but such experience as I have makes me feel that all these little points, each perhaps trivial by itself, in addition to the general resemblance, could not be brought about in different races by similar surroundings and habits, but must argue a rather close blood relationship.

It is needless to say that the paper is well and carefully written, though, like most craniological papers nowadays, it is difficult for even a craniologist to follow. One feels that if some of the redundant timber were cleared away one would see so much more of the wood.

F. G. PARSONS.

POTS AND PANS. By H. S. HARRISON. Gerald Howe. 1928. pp. 88. 2s. 6d.

This is an excellent little book. The author, from his extensive knowledge, aided by shrewd reasoning and careful deduction, has given us in a small compass an encyclopaedia of the art of pot making. The forms of pots, the characteristics, chemical compositions and reactions to heat of the various kinds of clays, the methods of pot making and finishing processes (in which are included slips, glazes, decorations and designs) are all discussed in a style which is at the same time easy reading and good literature. It is not every writer who has the power of enabling the amateur to assimilate most of his subject at a first reading. There is a history of pottery in England and of porcelain in China. The author announces his leanings to the diffusionist school, and gives his reasons. This admirable little treatise should be bought (its price is within the reach of all) by all those who are beginning the study of archaeology, and those who are already experienced in the subject will find it a valuable recruit to those ' bibles ' to which frequent reference is necessary.

R. C. C. CLAY.

THE STORY OF THE ROADS. By CYRIL HUGHES HARTMANN, M.A., B.LITT. Routledge. 1927. pp. xx, 194, 12 plates. 7s. 6d.

The author's real interest would seem to be in present day and future roads in this country and their administration : he has made this the excuse for attempting a ' comprehensive survey ' of the history of English road-travel. It is not very successful. A work intended for the general reader requires no less mastery of material than the average technical monograph, and should not merely be conflated from secondary sources. The best feature of the book is Mr Hartmann's exposition of the legal and administrative history concerned, from the Statute of Winchester onwards ; but his presentation is throughout haphazard, and the nature of prehistoric trade, the significance of Roman roads (the Icknield Way is not one) in historical geography, and the economic position of the medieval village, are only a random selection from his blind spots. There are patches of pleasant reading here and there, and the author is perhaps most successful in sketching the age of Telford and Macadam, but the general reader is ill-served by so much omission and mis-statement. Topography is practically ignored (Ogilby is only mentioned to be misdated by a century), and there are no maps.

A chatty style in anecdote does nothing to relieve the failure of this book to do justice to its ambitious scope. On page 127, ' venial ' should read ' venal '.

C. F. C. Hawkes.

HANDBUCH DER ALTARABISCHEN ALTERTUMSKUNDE, in Verbindung mit Geheimrat Fr. Hommel und Prof. Nik. Rhodokanakis herausgegeben von Dr Ditlef Nielsen. 1 Band. Die Altarabische Kultur, mit 76 abbildungen. Copenhagen: Arnold Busck. 1927. pp. 272.

For half a century many important detailed studies have been published relating to southern Arabia ; and there was need of a work of synthesis, to summarize, co-ordinate and, when necessary, harmonize the results. This need is met by the *Archaeological Manual of Ancient Arabia* whose publication has been begun by Professor Nielsen, with the collaboration of experts such as Hommel, Rhodokanakis, Grohmann and Litmann. The first volume, just out, deals with the civilization of ancient Arabia ; two more will follow, containing a selection of inscriptions, with translations and notes, a grammar and a lexicon. When publication is complete—and one hopes it may be soon—we shall have, in three volumes of a reasonable size, a useful summary of what is known about ancient Arabia, and more particularly, southern Arabia.

Whilst the next two volumes will be specially concerned with linguistics and philology the first covers all the other branches of science, in a form somewhat condensed. In the opening chapter—which serves as an introduction—Nielsen records the history of exploration and of archaeological investigations in southern Arabia, from those of Niebuhr down to the latest—of J. Halévy and Glaser. Then he passes in review the work carried out in Europe and the data which all these researches have provided for science. Nielsen deals likewise with other fields of discovery—Abyssinia, The Hejaz, and Arabia Petraea and The Hauran—all of them regions where other traces of ancient Arabian civilization are to be found ; concluding with general remarks about this last subject. This gives us in a few pages a very good, brief, clear summing up of the whole matter. Bibliographical footnotes are provided ; would it not however have been more useful if they had been collected together as a bibliographical index ?

Professor Hommel, who is well known for his important works, particularly his *Southern Arabian Chrestomathy*, and his *Summary of the Geography and History of the Ancient East*, gives in a chapter of 52 pages the essential facts of southern Arabian history. After a rapid survey of the geography of the region, the sources (of which inscriptions are the most important), and the prehistory, he deals with the Minaean kingdom (14th to 8th century approximately), which carried Himyaritic influence as far as northern Arabia ; then he comes successively to the priestly dynasty of the Sabaean Mukarribs (beginning at an unknown date and ending probably at the end of the 8th century B.C.), the Sabaean kingdom, properly so called (650–115 B.C.), the kings of Saba and Dhu-Raydân (115 B.C. to about 300 A.D.), and lastly, the more eastern kingdoms of Kataban and Hadramaut, as well as the later times of the Sabaean royal families. Though short, this narration will be found most useful, thanks to the care and accuracy of the author.

In the third chapter Rhodokanakis has condensed the substance of many works recording the social and political organization, the laws and the country life of southern Arabia. This section contains some extremely interesting ideas about tribal organization, castes, and land tenure—or, strictly speaking, about what we can infer from the inscriptions concerning them.

'Southern Arabia is the land of ruins', says Grohmann, at the beginning of the chapter devoted to archaeology. Unfortunately the majority of these ruins are difficult of access, and one cannot hope for methodical excavations to be practicable there for a long time to come. Grohmann has necessarily therefore, so far as architecture is concerned, confined himself to the results achieved by expeditions of discovery.* But this deficiency is to some extent made good by a comparative use of ancient Ethiopian architecture, which throws light on the construction of ramparts, towers, and temples, on hydraulic works and on funerary architecture. Next Grohmann considers the sculpture, known to us by some specimens in low relief or in the round. These are, for the most part, rather stiff and awkward, as can be seen from the photographs illustrating the chapter. Finally come the minor works of art, represented by a certain number of rather pretty objects.

In the chapter relating to the religion of Ancient Arabia Nielsen summarizes those cherished theories which he has already put forward so many times before, notably in his work *Der drei-einige Gott* (Berlin, 1922)—the existence of an astral trinity consisting of the moon-god Ilmaqah ('Il or 'Ilah), a solar goddess Šams ('Ilat, Ilahat) and of the god of the planet Venus ('Attar); in this trinity the moon-god 'Il ('Ilah) would have a privileged place, being a god common to Semitism. From these religious conceptions of southern Arabia were derived, according to Nielsen, the essentials of Babylonian religion, of Mosaic monotheism, and even of Islam. It is a thesis that is full of ingenious, if disputable, ideas ; and it happily concludes a fine work.

One feels however, some uneasiness about the title which is given as *Ancient Arabia.* Nielsen, it is true, in his own two chapters, deals with northern as well as southern Arabia ; but Hommel, Rhodokanakis and Grohmann discuss only *southern* Arabia ; and one wonders whether the two next volumes—chrestomathy, grammar and lexicon—will be regularly limited to the Arabic of the south ? This would be a great pity, for Libyanite, Safaitic and Thamudean texts cannot be ignored, and have long needed synthetic treatment.

In conclusion, a word of praise must be said for the fine format and abundant and varied illustrations. The convenient index is complete, an undertaking which will certainly be of the greatest utility J. CANTINEAU.

INTERNATIONAL GEOGRAPHICAL UNION. First Report of the Commission on Pliocene and Pleistocene Terraces. Edited by K. S. SANDFORD. 1928. pp. 123.

This collection of papers is a welcome proof that geologists are at last paying serious attention to points which concern archaeologists ; but it shows also how much remains to be done.

Prof. E. Chaput, in an excellent review, traces two raised beaches round the Belgian and French coasts, which he inclines to assign to (1) the Monastirian level (12–15m.) with Acheulean and Mousterian cultures ; and (2) the Tyrrhenian level (30–35m.) with Chellean and pre-Chellean implements.

In the Nile valley Dr Sandford and Mr Arkell find Chellean and Acheulean at the same levels as in France, but the Mousterian occupies two lower terraces. In our English river-valleys, although the same two levels are well marked, both Prof. Marr and

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* That is, to the results of surface observation, in default of those which might have been acquired by excavation.—*Translator.*

Mr Dewey insist upon the occurrence of great aggradations, which may confuse the cultures, and prevent us from assuming that the deposits on the higher terraces are necessarily older than those of the lower ones.

Dr W. B. Wright gives a preliminary account of the ‘ 25 ft. raised beach ’ of Scotland, which, in view of its variations in level (from 35 ft. to ordnance datum), he prefers to call the ‘ Early Neolithic Beach ’ : but even this is hardly satisfactory, since it is clear that its rock-shelf was cut at Oban before the Azilian period—possibly long before ; and the only safe inference seems to be that Scotland has been subjected to greater oscillations of level in neolithic times than we have any evidence of in England and Wales. Even in England however the neolithic subsidence was not a continuous process, but was subject to fluctuations of level, which, according to Mr C. J. Gilbert, continued even into post-Roman times ; so that they may, when fully studied, be of considerable archaeological importance.

Prof. C. Depéret, having previously established the Tyrrhenian and Monastirian levels in Europe and north Africa, now extends them to the Euphrates and the Makong ; and in the former locality an implement has been found at 30m., which he compares with the pre-Chellean of the same level at St. Acheul. He concludes that this terrace-formation is not due to earth-movements, but to ‘ eustatic ’ changes of sea level ; but in accepting this conclusion we must remember that it is not incompatible with local warpings (especially perhaps in glaciated regions), and that, as Scotland shows (to say nothing of Scandinavia), it is unsafe to correlate sea-beaches in distant countries by level alone, without biological or archaeological corroboration. H. BURY.

IN THE BEGINNING. By G. ELLIOT SMITH. Gerald Howe. 1928. pp. 88. 2s. 6d.

This, the introductory volume of ‘ The Beginning of Things ’, is a statement of the diffusion theory which, by means of this series and of other publications recently issued, is being broadcast for the edification of the general public. The present volume is written in a didactic style with sweeping statements as if there were no contrary views and as if the whole subject was proven. Dr H. R. Hall has given his reasoned opinion against the priority of Egyptian over Sumerian civilization (ANTIQUITY, II, 56), and has thus shattered the foundations on which the diffusionists have built up their theory. Although most archaeologists will agree with Dr Hall, none would suggest that there is no such thing as diffusion of culture, or that independent invention is the whole story. If culture originated in Egypt, it must have risen *de novo* in that region ; and if it thus developed independently in Egypt, why could it not have done so occasionally elsewhere, given the requisite opportunity ? The truth lies, as it always does, in the happy medium. There are no axioms in archaeology.

This book is well-written, well-printed and of pleasing format. It is easy to read and is full of valuable information, while some of the author’s deductions are both interesting and ingenious. It is certainly a book to read over and think over.

R. C. C. CLAY.

VORGESCHICHTLICHES JAHRBUCH. Bands I–III ; covering the years 1924–6. Walter de Gruyter & Co., Berlin.

An annual bibliography, classified under subjects, of the papers appearing in the thousand and one transactions of the world, would be, if it were really well done, an immense boon. The multiplication of proceedings defeats its own end, unless the student has some means of discovering what they contain, and if they contain anything bearing upon his special line of research at the moment.

This Year-book is an attempt to meet the need, and on the whole it does so very well indeed. It is not a mere bibliography, but contains useful critical summaries of the more important papers. The first test, however, which one applies to a bibliography is the test of accuracy, both of classification and of details. The British section tested thus does not come very well out of the ordeal. It is rather strange, for instance to find Dr Clay's paper on a gun-flint factory in the neolithic section ; and Dr Gardner's paper on an earthwork of almost certainly medieval age in the pre-Roman Iron Age. The classification by periods is excellent in theory, but impossible to carry out consistently in practice ; for so many papers deal with remains whose age is not known.

When it comes to spelling and other small but important matters, we find that the compilers make the usual mistakes. How is it that, whereas English people do not make many mistakes in the spelling of foreign names, it is most unusual ever to find English names correctly spelt abroad, whether in books or on an envelope ? We wonder whether the style of handwriting adopted on the continent may perhaps be responsible. There can be no excuse for some of the errors which abound, for instance, on pages 205 to 230 of the second volume. The correct copying of a printed title is surely not a very difficult matter, yet we find such misprints as the following :—page 208, 'Marshes' for Marches ; page 212, 'anusual' for unusual ; page 213, 'Aubrey, Herbert' instead of Herbert, Aubrey ; page 214, 'Alderley' for Alderney ; page 216, 'Trannion' for Trunnion ; page 217, the title of Dr Bulleid's book is printed as if Somerset were in London ; page 219, Mr R. G. Collingwood's name, correctly printed on the following page, is spelt 'Coollingwod' ; page 220, Mr Ian A. Richmond appears as 'Jan B. Richmond' ; page 221, Gainstrop is spelt 'Gainstroup' ; page 222, Baddeley is spelt 'Baddelley'. Doubtless there are many others of the same kind.

However, the bibliography is better than nothing.

THE TEACHING OF PRE-HISTORY IN SCHOOLS. By DIANA PORTWAY DOBSON. Published for the Historical Association by G. Bell & Sons, Ltd. 1928. pp. 16. 1s.

Mrs Dobson's pamphlet fulfils a most useful purpose. It is intended to guide those who wish to instruct children in the early history of mankind, and to answer the questions put to them. We are particularly glad to read Mrs Dobson's second paragraph, which is the fullest possible justification for the pamphlet itself. The information given is accurate and well chosen, and the books quoted are, without exception, both interesting and reliable. What is more, certain books, which may be interesting but are not reliable, are conspicuous by their absence. We gladly recommend all parents and teachers to buy this pamphlet. The price should be stated on the cover.

ST. KILDA. By JOHN MATHIESON. *Scottish Geographical Magazine* (March 1928), XLIV, 65–90.

THE ANTIQUITIES OF THE ST. KILDA GROUP OF ISLANDS. By JOHN MATHIESON. *Proc. Soc. Ant. Scot.* (1927–8) series 6, II, 123–132.*

It may seem strange that one of the British Islands was without a map until last year.

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* The bad custom of printing the *series* number only on offprints is responsible for our not giving the reference in the more usual and convenient form.—ED.

In 1927, Mr John Mathieson went to St. Kilda and made a map of it. It is published in the *Scottish Geographical Magazine*, on the scale of 6 inches to the mile. There are few antiquities, and they, such as there are, are of little interest. The buried structure immediately above the village, of which Admiral Somerville published a plan in the *Journal* of the Royal Anthropological Institute (1912, XLII, 23-52), proves to be not an oriented passage-grave as he thought, but an earth-house, and therefore probably of much later date.

BAGHDAD IN BYGONE DAYS. By CONSTANCE M. ALEXANDER. John Murray. 1928. pp. 352, 16 illus. 16s.

This book is the life of Claudius Rich, who was British resident at Baghdad from 1808 to 1821. He was one of the earliest men to take an interest in the antiquities of Mesopotamia, and part of his collection is now in the British Museum. He had an adventurous career, and was one of those who make their own appointments instead of stepping into existing posts. We do not get a very clear idea of his character from this book, but it is an interesting record of a strange and interesting life.

AERIAL PHOTOGRAPHY : a comprehensive Survey of its Practice and Development. By CLARENCE WINCHESTER and F. L. WILLS. Chapman and Hall. 1928. pp. xvi, 236, 176 figures. 25s.

This book is claimed as a comprehensive survey of the practice and development of air-photography. There are no books which cover quite the same ground ; but we are not quite sure for whom it is intended. The chapter on 'Air-Photography in Archaeology' gives a very fair conspectus of the subject ; and there is a section devoted to the application of air-photography. There are also chapters on its place in education, geography and map-making. We do not quite like the substitution of ' aerial ' for the more usual word ; it may be correct, but it adds to the length of an already cumbrous phrase.

The book is illustrated by a number of excellent photographs, which would have been well reproduced if they had not been for the most part compressed to a ridiculously small size—in many instances quite unnecessarily.

THE STRIP-MAP OF OAKLEY REYNES, 1795 : with an introduction to the study of Field-maps. By G. HERBERT FOWLER. Bedfordshire Historical Records Society, vol. II, part i. Price not stated.

Mr Fowler has performed a very useful part in reproducing and describing the strip-map of Oakley Reynes. A handbook with some definition of the terms used in medieval times was very badly needed, and a description of a definite area was much the best way of setting to work. For the way in which Mr Fowler has carried out his task, we have nothing but praise. Perhaps it would have been useful to have mentioned one or two good books and articles which deal with cultivation systems ; but after all, the best way to learn about them is to study the facts at first hand. Those who wish to do so must certainly get this book.

FARMS AND FANES OF ANCIENT NORWAY : The place-names of a country discussed in their bearings on social and religious history. By MAGNUS OLSEN. English translation ; Oslo : H. Aschehoug and Co., and London : Williams and Norgate. 1928. pp. 349 with sketch-map and illustrations. 8s. 6d.

In ANTIQUITY for June 1928 Professor Magnus Olsen's researches were mentioned by the reviewer of a previous volume in this series by Dr A. W. Brögger. Dr Haakon Shetelig's *Préhistoire de la Norvège* (1926) was a notable forerunner in this valuable group of books, in which eminent Scandinavians are summing up the results of field-explorations carried on through the past century. And as Norse is not generally read, they are wise in providing translations and making their work accessible to all. This volume is very readably translated by Th. Gleditsch, and its novelty in scope is sure to stimulate any reader to whom the question has occurred—when we have collected and interpreted our place-names, what next ?

Professor Magnus Olsen's method is to classify and correlate his finds, digging down through the strata of successive ages like the explorer of a Roman site, until he is able to give an account of the social history of the country from the evidences, checked by archaeology, philology and other information that can be brought to bear upon the subject. In such a new adventure, criticism of details must be of less value at present than an attempt to sketch the main argument of the book.

He begins by distinguishing the place-names given by inhabitants from those given by travelling strangers. For example, along the coast is a string of islands of which the names are foreign ; they must have been landing-sites in prehistoric times when Norway was the ' North-way ' for trading-adventure to the Arctic, possibly when the country inland was hardly settled by a farming population. Then, taking the farm-names, he works back from the historical period, tracing the comparative ages of words used as elements of compound place-names. Such a word as *ruð* (ridding or reclaimed land) he finds applied to new farms formed by thralls and others of an inferior class, beginning in the eleventh century. Earlier than that are the large classes of names containing *staðir* (stead), *setr* (seat ; not the same as *sæter*, shieling) and *land* (with more of the meaning of a shieling, or ground lying out from the original main farmstead). These are mainly of the Viking age, though some 'steads' can be followed back to the fifth or sixth century A.D. and they imply secondary settlements founded by cadets or retainers of the ancient families whose ancestral homes are still known by the very ancient word *heim*. Of these, some are shown by philology to date as far back as the fourth and fifth centuries, and a few contain relics of the earlier Iron Age. Another word, *vin* (meadow) can be referred by similar arguments to the third and fourth centuries A.D. and must indicate the homes of important families in what is called the Roman period of Norse antiquities. But even these are secondary settlements, implying still earlier centres which are found with uncompounded names ; because the earliest stay-at-home population called their house simply ' the house ', or by some natural feature which distinguished the site. And alongside of these simple and archaic names are not a few which cannot be explained by even the oldest Norse vocabulary ; they must have been given in some ancient Germanic language by travellers or immigrants such as Shetelig has shown to have come into the country about 300 A.D. Geographical considerations also indicate the priority of such sites, and when Bronze Age remains are found upon them, the probability of their survival from very early times is argued, supporting the view advocated by Shetelig that the population of Norway has been continuous from the beginning.

Turning now to what our author calls in his title the ' Fanes ', we note how many parishes have been named from heathen sites on very ancient farms where the goðí or chief had a *hof* (temple). This word appears to have come into Norway about the seventh century, giving a limit to the date of these place-names. The *hörgr* (altar of stones) usually preceded the temple ; it was the primitive centre of the worship of Frey and other gods of fertility, served by priestesses, in the older form of Norse religion.

And names in *haugr* (howe) connect with archaic cults of the dead, in the north of Norway; in some cases the finds at such howes take us back to the fifth or fourth century A.D.

This rough sketch of the contents gives a hint of the highly curious and fascinating study which is here opened out. To most it will break fresh ground; some of these excursions may seem to advance almost too boldly into the mist, but the careful and documented reasoning of Professor Magnus Olsen ought to encourage the reader to make the adventure under such able guidance. W. G. COLLINGWOOD.

NOTES ON EXCAVATIONS OF PREHISTORIC AND LATER SITES AT MUIRKIRK, AYRSHIRE, 1913–1927. By ARCHIBALD FAIRBAIRN, F.S.A.SCOT. Proceedings of the Society of Antiquaries of Scotland, vol. LXI, 1927, pp. 269–289 (sketch-map of district, 4 miles = 3 inches, p. 271).

The Proceedings in which this paper is published reflect the character of the research which is flourishing in Scotland. It is of a very high order and is not confined to museums and libraries. Mr Fairbairn describes excavations on the Ayrshire moors, and gives a valuable record of field-work. The sites described consist mostly of hut-circles and cairns. By far the most interesting were the hut-circles which yielded beaker-pottery and which are attributed to the early Bronze Age. Curiously enough one of these was reinhabited in medieval times and yielded glazed potsherds. We note also with satisfaction that Mr Fairbairn (who we suspect has a good eye for such things) associates with a late medieval homestead some ‘ furrows of very early ploughing . . . still visible on the heather-covered land close by ’ (p. 274). The only criticism we have to make is the scarcity of plans of the sites dug. The sketch-map is a welcome complement to the paper.

WESSEX FROM THE AIR. By O. G. S. CRAWFORD and ALEXANDER KEILLER. With contributions by R. C. C. CLAY and ERIC GARDNER. Oxford: at the Clarendon Press. 1928. pp. xii, 264; 50 plates and 61 sketch-maps and figures. 50s.

This is the first book of its kind—a reproduction of 50 large photographic plates, taken from the air in the summer of 1924, of camps and many other archaeological features of Hants, Wilts, and Dorset.

But it is far more than this. It can fairly claim to be an introduction to the surface archaeology of the Chalk districts, for the authors give a general survey of the whole subject, written in plain un-technical language, as well as an interpretation, plate by plate, of the features shown by the Air Photographs themselves. There is also a short history and bibliography of Archaeology from the Air.

The introduction covers the chief kinds of earthworks illustrated in the book:—camps, prehistoric villages, ancient cultivation-systems and burial and other mounds. This does not however exhaust the list: in the course of the text many references will be found to earthworks which may be cattle enclosures, to long and short linear banks and ditches both formidable and slight, to the sites of Roman villas, to medieval enclosures, ancient roads and a host of other earth-marks which are at present frankly inexplicable. The section on Barrows is a useful summary, though the long account of ‘ pillow mounds ’ must be justified rather by the novelty of the subject than by the number of the examples illustrated by the plates.

It may be doubted if the explanation given of the two peculiar straight-sided mounds shown in the plate of Bokerly Dyke—that they are ordinary Long Barrows shaped by ploughing along their sides—will hold its ground. Others of this peculiar railway-embankment type, Granbarrow and Knapbarrow, occur on Cranborne Chase, and there is one if not two on the down near Long Bredy in Dorset where the evidence of such ploughing is not clear. Moreover there are numbers of Long Barrows which are being ploughed out and yet retain their characteristic shape, so that it may well be that this little class of long straight mounds should not be grouped with Long Barrows at all. Like the inexplicable mounds shown on the plate of Steeple Langford Cowdown they should be placed on the suspense account.

The new weapon of Air Photography will assist the advance of Field Archaeology mainly along two lines :—it will discover new earthworks at present invisible, and it will complete, connect, and explain fragments hitherto incoordinated.

The most striking instance of new discovery is perhaps that of an old earthwork on Meon Hill near Stockbridge which is mentioned in a Saxon charter of 982. This being quite invisible from the ground was deliberately sought for from the air and it revealed itself, not by the darker shade of green which is the usual sign of the silted-up ditch, but by a brilliant semi-circle of scarlet poppies growing in a field of yellow oats !

But this is only one of many ; Woodbury and Farley Mount are other striking examples of camps, and numerous examples of minor enclosures and other earthworks hitherto unknown appear in many of the plates.

Of the interpreting power of Air Photography perhaps Ebsbury and Pertwood are the most striking examples. In the former, two sections of strong double banks, now 400 yards apart, are shown to be parts of the continuous ramparts of a strong camp, the missing portion having been ploughed out or deliberately destroyed by Romano-British cultivation during the Pax Romana. At Pertwood, where a Roman Road runs amongst numerous lynchets, the air photograph makes it possible to disentangle the field system into a pre- and a post- Roman Road period.

The elucidation of the palimpsest of earthworks on the chalk has always been one of the most fascinating of problems. The superposition of one bank upon another may sound easy to detect from the ground, but certainty is in fact often impossible without the aid of excavation. Air Photography from its more comprehensive view-point will often explain such problems which are insoluble upon the spot. The demonstration of the Celtic field system lying underneath the Saxon—one of the first achievements of the new arm—was striking enough and appears upon nearly every plate ; but there are other fields to conquer. An even earlier system is suggested by the plate of ‘ Wudu-burh ’ and the excavation described in connexion with it, and it may well be that traces of Bronze Age or even Neolithic cultivation may be revealed by the camera. There are many cultivation banks upon the downs which it is very difficult to fit in to either the Celtic or the Saxon systems.

One of the most important contributions of the book to the study of ancient fortified enclosures is the support given by the photographs and by the authors to the existence of more ancient and weaker camps upon the hill tops which have been obscured, partially incorporated with, and in some cases supplanted by, the more formidable structures of the Iron Age. The ‘ annexes ’ of Danebury and Bury Hill in Hampshire are well accounted for by this explanation, while the inner circles of Yarnbury and Scratchbury in Wiltshire, and the feeble camp on the neck of Hambledon Hill in Dorset are good examples of earlier camps. The frequent association of groups of Bronze Age Barrows and of Long Barrows with Iron Age camps has always been a puzzle, and it seems likely that the further problem of the settlements of these earlier people will have light thrown upon it by the excavation of these feebler camps—Knap Hill, Windmill Hill and the Trundle will not stand alone.

There are not many faults to be found with the book. More measurements of earthworks described, *e.g.*, the vertical height and the overall breadth of the ‘ strong triple ramparts ’ at Ebsbury, would be welcomed for comparison with well-known camps. The orientation of the plates, though doubtless difficult to arrange, might be better, those of Woodbury and Overton Down for instance are completely upside down, so that the reading of the shadows needs a little attention. The North-points are never marked upon the plates and those upon the explanatory diagrams are very inconspicuous. These too, as well as the numbers of the pages, are placed in the bottom right-hand corner instead of the top—a departure from convention which does not aid rapid reference. The explanatory diagrams are admirably clear and helpful ; if they could have been all on the same scale for the sake of comparison they would have been perfect. But these are small matters—taken as a whole, it is difficult to see how in form or arrangement this sumptuous book could possibly have been improved. The Authors and the Publishers are to be congratulated upon their pioneer work. J. P. WILLIAMS-FREEMAN.

RACE AND CIVILIZATION. By FRIEDRICH HERTZ, translated by A. S. LEVETUS and W. ENTZ. Kegan Paul, Ltd. 1928. pp. xii and 328. 18s.

Mr Hertz has read enormously, industriously, and uncritically. The result is a book which, while containing many quotations of interest, does so much more credit to the author’s heart than to his head as to produce a feeling of mental confusion and malaise. There is nowhere any evidence that Mr Hertz has any first-hand knowledge of the primitive and savage peoples to whom he continually refers ; moreover there are astonishing inaccuracies. The distinguished Cambridge psychologist mentioned on page 262 as having ‘ many years’ study of the spiritual life of the natives of Australia and Africa ’ to his credit would certainly fail to recognize himself. Nor in the context can the work of Andrew Lang, who died in 1912, be said to be recent.

At the end of each chapter is a series of notes, but these constitute no adequate substitute for the absence of an index. C. G. SELIGMAN.

ROYAL COMMISSION ON NATIONAL MUSEUMS AND GALLERIES : INTERIM REPORT dated 1st September 1928. H.M. Stationery Office. pp. 64 and 3 plans. 2s.

Balaam the prophet was invited by Balak, King of Moab, to curse the Israelites and ended by blessing them. The Royal Commission appointed to investigate the position of our National Museums, and to consider in what way expenditure may be limited, has replied by an immediate and urgent recommendation that £779,000 shall be spent at once upon them, pending the issue of the final report. That the Commission should deem it necessary to issue such an Interim Report, containing so startling a recommendation, shows that the position is one of considerable urgency and anxiety.

Why, it may be asked, is so large an amount needed, and that directly ? The reply would seem to be that the Treasury, as a body, does not appear to have realized its obligations to the National Collections, and in the words of the report ; ‘ economy has already been pushed beyond the point of prudent administration ’. Such a conclusion, arrived at after careful investigation and the calling of expert witnesses, constitutes a grave indictment of a Public Department, and its seriousness is enhanced when we remember how our great Public Museums have come into being. They are national institutions, it is true, but their collections represent very largely the generosity of private benefactors, who have entrusted their ‘ cabinets ’ to the Nation for public good, and the benefit of students. This being so, a special responsibility rests with those whose duty it is to see that these collections are adequately housed, protected and preserved. But a trust of such magnitude must be financed and it is the absence of adequate grant that has made the recommendation of the Royal Commission so emphatic : ‘ the impression was borne in upon us at a very early stage of our inquiry that the National Museums and Galleries have for long been treated as the Cinderella of the Social Services ’. It would be difficult to justify so short-sighted a policy, which is unworthy of the Nation which on the one hand accepts gifts, whose material and spiritual values are immense, and on the other hand compels them to be thrust into crowded storerooms, or cellars where they are little better than dead material and liable to deterioration. In the last five years it is computed that private donations to the British Museum have averaged £40,000 a year in value, while the Government purchase grant has been only £25,000 a year.

What are these urgent requirements ? First of all comes the British Museum Library, with its daily accession of material under the Copyright Act. Here the actual weight of books is structurally affecting the building and removal of over 250 hanging presses is advised. It is impossible to secure newspapers for reference immediately ; the reader may have to wait from two to nine days for them to be brought up by motor from Hendon. The Commission recommends the expenditure of £205,000 on the Library, and the concentration of all newspapers at Hendon, which will cost immediately £43,000. Nothing could be more reasonable.

An outstanding case of official parsimony is the condition of the Department of Ethnography, which is crowded ‘ to saturation, and is a reproach to our standing among other Nations ’. This state of affairs is so serious that the Commission reserves it for the final report. It seems hardly credible that a Great Empire whose Dominions are so far flung, should be content to relegate the important subject of Ethnology, which affects millions of British subjects, to a single small gallery in an already overcrowded museum.

Nor are matters any better in the departments of natural history and geology. The important science of entomology, so intimately connected with human life itself, is overcrowded, and systematic study thereby retarded. For this and enlargement of the whale gallery an immediate sum of £133,000 is needed. Geology is in a worse condition still, the crumbling premises in Jermyn Street are actually propped up, so bad is their condition, and the number of visitors is falling because the scaffolding obscures the cases. This museum was condemned 30 years ago, and yet lingers on, deplorable and dangerous. Clearly the sane policy is to transfer the collection to South Kensington, and this will cost £220,000. It will concentrate material, and avoid overlapping, while releasing a very valuable site. Doubtless the Commission has more yet to say on the subject of the National Museums, but at all events it has already provided subject-matter for very serious present consideration.

Without hesitation the Commission, in dealing with Art Galleries, recognizes the woeful plight of the National Portrait Gallery, which for some time past has been so hopelessly crowded as to discourage the visitor. And yet, crowded as it is, the store rooms are full of unhung pictures. If we are to preserve the memory of our national worthies, at least it should be done in a manner that befits the illustrious dead of a great nation. It is a disgrace for a gallery of this standing to be compelled to hang its portraits in three, or in some cases, four rows, with the top row far above the line of sight. Temporary measures such as the erection of screens, and the blocking of doors, and even windows, have been exhausted, and extension is imperative. The sum proposed for this is £40,000. While these words were being written, news arrived of Sir Joseph Duveen's magnificent offer to undertake the work proposed for the National Portrait Gallery by the Commission. In itself this is the most cogent criticism of the parsimony which has been so rigorously applied to our 'fountain heads of knowledge and art'. Where the nation has failed, the private donor once again steps in.

A small expenditure of £3,000 is urgently needed even in the Science Museum. There still remain nine other Public Museums, Galleries, etc. in London, of which nothing has been said as yet, but which will doubtless require to be set in order, to keep the national collections abreast of the times.

The state of affairs in Scotland appears to be serious too. The National Library of Scotland, as important as the British Museum, is in a bad case; it is described as chaotic, and its accommodation inadequate, in places 'not free from damp'. Such a state of things cannot continue; something must be done, and that quickly—the Commission estimates the immediate cost at £170,000. The Royal Scottish Museum too must be made fully fireproof throughout, at present only a portion is safe in this respect: for this £35,000 will be required.

In presenting these initial recommendations the Commission is careful to state very emphatically that 'we have had regard to the financial exigencies of the present time, and have concentrated solely on essential needs'. In other words, the time has come when the nation's museums and galleries must cease to be starved and neglected by Government departments bent on pennywise economy. The national treasures must not be risked by the piling up of vast arrears of building requirements. The Commission realizes to the full that it is the duty of the Treasury to say 'No' to proposals for increased expenditure unless they can be justified, but is likewise of opinion that in the present case it has discharged its duty with rigour. It would be interesting to know if the officials of the Treasury ever visited the museums and galleries in question before turning a deaf ear to the appeals made. Certainly it is fairly obvious to the bulk of those who frequent museums that the crying need of those institutions is not economy but expenditure.

Our national collections are in present danger; the sum recommended by the Commission is an irreducible minimum; and the work indicated ought to be set in hand immediately.

FRANK STEVENS.

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TO

VOLUME TWO

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CORRIGENDA

Vol. I, page 433, line 5, *for* 1086 *read* 1006

Vol. II :—

THE DISCOVERIES AT UR, by H. R. HALL

page 57, last line, *delete* not
„ 60, line 15, *for* ‘ Black Castle ’ *read* ‘ Black Earth ’
„ 60, footnote 6, „ Charbameaux „ Charbonneaux
„ 61, line 18, „ These are set „ There are sets
„ 63 „ 36, „ ‘ polettes ’ „ ‘ palettes ’
„ 64 „ 34, Dr Hall writes that Mr Woolley informs him that he has discovered socketed spearheads of this early period.

„ 91 „ 7, The *markhor* is a wild sheep, not a buffalo, as stated.
„ 97 „ 6, The date of *The Times* should be 28 November.
„ 139 „ 5, *for* fig. 2 *read* fig. 1
„ 205 „ 21, „ Clydogan „ Clydogau
„ 207 „ 22, „ Heraclitus „ Heraclius
„ 228 „ 25, „ 89 „ 90

In the descriptive lettering on the plate facing page 192 : *for* ‘ Nazzebah , *read* Mazzebah ; ‘ alter ’, altar ; ‘ Libration ’, Libation ; ‘ Intrusine ’, Intrusive.